# Mirasys NVR 5.0

User’s Guide

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# Before you start

Mirasys NVR software is a distributed, digital video management system (DVMS) for video and audio surveillance applications.

The software can be used for monitoring real-time and recorded video, audio and text data, and to control dome cameras, I/O devices and IP cameras.

The software supports systems consisting of both analog and/or digital surveillance cameras, supporting the creation of analog (DVR), digital (NVR) or hybrid (consisting of both analog and digital) surveillance systems.

A centralized surveillance system can consist of up to 100 local or remote recorders.

These sections contain information that can be useful before you start using the program:


- "Help documentation" on page 1
- "Overview of this guide" on page 1
- "Conventions used in this guide" on page 2
- "Technical support" on page 2


## Help documentation

This help documentation is available:

- *Installation Guide*: Shows how to install the recorders and connect dome cameras, video matrices, and digital inputs and outputs.
- *Administrator's Guide*: Shows how to use the System Manager program for configuring the system.
- *User's Guide*: Shows how to use the Workstation program for video and audio surveillance.

The PDF help documentation is on the DVMS Installation CD.

You can also access the *Administrator's Guide* and the *User's Guide* by clicking **Help** in System Manager or Workstation.

## Overview of this guide

This guide is intended for those who use the Workstation program for monitoring video, searching for recorded data, exporting video and audio, and managing alarms.

This guide contains these sections:


- "System architecture" on page 4
- "Features" on page 5
- "Logging on" on page 7
- "User interface" on page 9
- "Navigator" on page 14
- "Cameras" on page 28
- "Audio" on page 40
- "Video outputs" on page 42
- "Digital outputs" on page 46
- "Digital inputs" on page 49
- "Audio communication" on page 51

- “Playback” on page 55
- “Searching for recorded data” on page 57
- “Image tools” on page 67
- “Exporting video, audio, text and alarm data” on page 69
- “Managing alarms” on page 76
- “Archives” on page 81
- “Configuring external devices” on page 83

The system is configured using the System Manager application. For more information, see the *Administrator’s Guide.*

## Conventions used in this guide

This guide uses these conventions:

| Convention | Usage |
|---|---|
| **Bold** | **Highlights commands on buttons and menus, icon names, and dialog box options.** |
| *Italic* | **Highlights document titles.** |
| `Monospace text` | **Highlights text that you type.** |

## Technical support

For technical support, please contact the supplier of the system.

## What’s new in 5.0

New features discussed in this manual:

- **LICENSE UPGRADE**: The Mirasys NVR 5.0 software is NOT compatible with previous Mirasys NVR (or V/N) licenses. When upgrading an older system to Mirasys NVR 5.0, it is important to update the license key to version 5.0 BEFORE installing the 5.0 software.If the software is upgraded before the license key is updated, all recorder specific information (including profiles and stored material) will be lost. Please see *Mirasys NVR Installation Guide* for information on updating the license key.
- Mirasys V/N series is now Mirasys NVR. The old Mirasys V and N user interface skins have been replaced by a new green skin.
- Support for H.264 video compression. Mirasys NVR 5.0 supports the H.264 compression method, enabling cameras with H.264 support to transfer the video data in the highly compressed format. Please see *Mirasys NVR 5.0 System Administrator’s Guide* for information on using H.264.

## What’s new in 4.8

New features discussed in this manual:

- The **Properties** window can be docked on the left or right side of the screen. Please see “Device properties” on page 20 for further information.
- All alarm specific recordings can now be easily exported. If an alarm activates pre- or post-alarm recording for one or more devices, the alarm specific recordings can be exported through the **Alarm** window. Please see “Exporting alarm specific media clips” on page 72 for further information.
- Mirasys presents NVR Pro, a new single recorder license type with functionalities tailored for the retail segment. For information on NVR Pro functionalities, please see “NVR Pro” on page 6.

- When an alarm occurs, the device that has triggered the alarm is highlighted in the Navigator and the Map Tool. Please see “Navigator” on page 14 and “Map Tool” on page 25 for further information.
- Mirasys NVR client applications (Workstation and System Manager) are now fully Windows Vista compatible. *Note: Due to limited functionality, it is strongly recommended that the Mirasys NVR recorder software should not be installed on Windows Vista.*

# Introduction

These sections show the system architecture and program features:


- "System architecture" on page 4
- "Features" on page 5


## System architecture

The system has these components:

- 1-100 DVRs (digital video recorders) or NVRs (network video recorders)
- Master Recorder (one of the recorders)
- Client programs
  - Mirasys NVR System Manager
  - Mirasys NVR Workstation

**Recorders**

The DVRs or NVRs record video from analog or IP cameras and write the video on hard disks. A recorder is accessed either locally or remotely by using the client programs (System Manager and Workstation).

**Master Recorder**

One of the one to five recorders must be a Master Recorder. If the system contains only one recorder, that recorder is the Master Recorder. If there is more than one recorder, the Master Recorder can be set freely. The Master Recorder is set when the client programs are installed.

The Master Recorder does these things:

- It verifies the identity of all programs and users who want to log on to the system (authentication).
- It stores all system configuration data.
- It stores all user data.
- It monitors the system.
- It synchronizes the clocks on all recorders.
- It generates reports.

**Client programs**

The **System Manager** program is used by the system administrator for the following:

- Configuring the recorders.
- Adding user accounts and user profiles.
- Managing the devices connected to the system.
- Monitoring the system.
- Configuring alarm triggers and actions.

The **Workstation** program is used by the end users, for example, for the following:

- Monitoring real-time video, audio and text data.
- Examining recorded video, audio and text data.
- Exporting video, audio and text data clips to local media.
- Receiving and handling alarm notifications.

# Features

The Workstation program has these features:

**Real-time and recorded video and audio**

View real-time and recorded video, and listen to real-time and recorded audio from one or more recorders.

**Text data**

The recorders can record text stream data from devices like cash registers or filling station pumps. You can view real-time text data in synchronization with video and audio data. In addition, you can search text data by specifying different search criteria. Text data can be printed through the real-time and playback views.

**Audio communication**

With two-way audio, you can speak with people over a network. A microphone and a loudspeaker are connected to the recorder, and voice is transmitted over an IP network.

**Dome camera control**

Pan, tilt, and zoom dome cameras and start preset dome camera tours.

**Maps**

With the help of the Map tool, you can quickly access cameras and other devices while having a visual overview of the target site. Using maps and floor plans provides an excellent overview of the target site and device placement.

**Search tools**

Find recorded video, audio, and text by using one of the search tools. You can save the images you find, for example, on the local hard drive or a USB memory stick. You can also print out images.

**Export media clips**

Export video, audio and text data clips as Windows Media files. The files can be played back on any computer using Mirasys Media Player or Windows Media Player.

**Archives**

Create archives containing data from as many video, audio and text data sources as necessary. The archive files can be quickly exported and opened in any Mirasys NVR Workstation client.

**Video outputs**

Show video on video monitors, select the cameras that are shown, and run camera tours.

**Digital inputs and outputs**

Control different external devices that are connected to the recorders, for example doors and gates. You can also monitor external devices through digital inputs.

**Alarms**

Receive alarm notifications and alarm video and audio from the recorders.

# License types

The Mirasys NVR software has two default license types: the single recorder NVR Pro license aimed for the retail and small business sector, and the NVR Enterprise license aimed for multi-recorder and multi-user surveillance installations.

## NVR Pro

The NVR Pro license type is meant for single recorder NVR systems. The license type is tailored for the needs of the retail sector and small businesses, and as such is constructed to offer services related to their needs.

The NVR Pro license contains the basic functionalities needed for small scale video surveillance, including real-time and playback video viewing. The license does not support advanced features such as (but not limited to) the Map Tool, archiving, audio channels or text data channels. The license allows for one designated user profile.

The NVR Pro license has the same user interface as the Mirasys NVR Enterprise software with non-included functionalities greyed out.

## NVR Enterprise

The NVR Enterprise license type offers the full functionality of the NVR software for multi-recorder installations.

Unlike the NVR Pro license, the NVR Enterprise license has a full support for all features supported by the software. The license allows for up to 20 simultaneous users with varying user rights.

The NVR Pro license can be updated into an NVR Enterprise license by updating the license key. Please refer to *Mirasys NVR Installation Guide* for information on updating the license key.

# Logging on

This section shows how to log on to and off of Workstation.

**Default username and password**

Username: `Admin`

Password: `0308`

**To log on to Workstation:**

1. Do one of the following:
   - Double-click the shortcut icon **DVMS Workstation** on the desktop.
   - Click **Start** , point to **Programs** and then to **DVMS**. Click **DVMS Workstation**.
2. The address selection screen is displayed. Click **OK** or wait for 10 seconds, after which the logon screen is automatically displayed.
   **NOTE:** *The address selection step may be disabled in specific installations. Instructions for selecting a different address are provided in the Administrator's Guide.*
3. The logon screen is shown. Type the user name in the **User name** box, and the password in the **Password** box.
   **NOTE:** *The password is case sensitive.*
4. If the End User License Agreement is shown, you can accept it by clicking **Accept Terms**. Clear the check box **Do not show this dialog box again** if you do not want the agreement to show up again.
5. Click **Log on**. A progress bar is shown on the screen while the program starts.

After the program has started, the user interface is shown. For instructions on how to change the user interface language, see "User interface language" on page 11.

**To log off from Workstation:**

1. Do one of the following:
   - On the menu bar, click **File** and then **Exit**.
   - On the menu bar, click **User** and then **Log off**.
   - On the status bar, click the **Exit Mirasys Workstation** button (lower right corner of the screen).
2. In the **Logoff** dialog box, click one of the option buttons:
   - To let a different user log on, click **Log off current user.**
   - To quit Workstation, click **Exit Workstation.**
3. Click **OK**.

## Locking Workstation

You can manually lock the program to protect it, for example, when you go away from your desk.

**To lock the program, do one of the following:**

- On the menu bar, click **User** and then **Lock Program**.

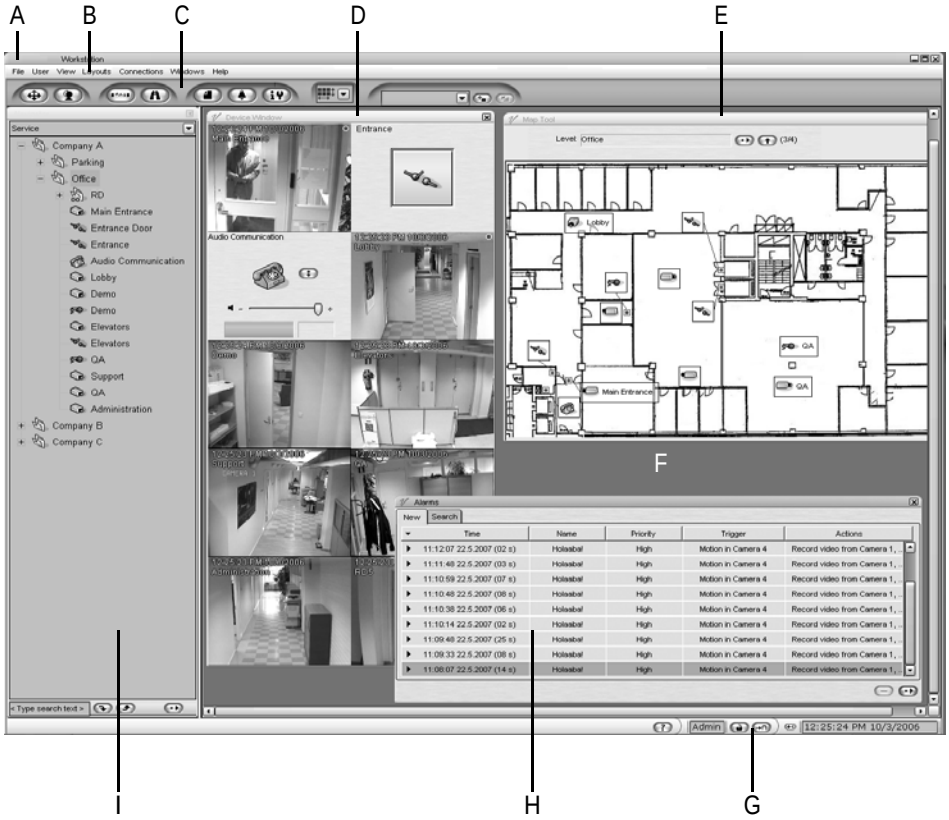
- On the status bar, click the **Lock Program** button.

**To unlock the program:**

- After locking the program, the logon screen is shown with the user's name pre-filled the **User name** box. Type the password in the **Password** box.
  **NOTE:** *The password is case sensitive.*

**NOTE:** *You can also use the automatic lock function to protect Workstation. For more information, see "Protecting Workstation" on page 11.*

# User interface




The user interface contains these elements:

**A. Title bar.** Shows the name of the program and the Workstation **Minimize**, **Maximize** and **Close** buttons.

**B. Menu bar**. The menu bar gives access to, for example, user settings. You can hide the menu bar from the **View** menu.

**C. Toolbar.** Click the buttons on the toolbar to show or hide user interface windows and elements. The buttons are described in "Toolbar" on page 10.

**D. Device Window**. Shows video, audio and other device views as well as the device group specific **Minimize**, **Maximize** and **Close** buttons. *NOTE: You can also maximize the device window by double-clicking the device window title bar.*

**E. Map Tool**. Shows a map of floor plan of the selected target site. By clicking the device icons you can access the devices. For example, you can open video views directly from the map.

**F. Work space**. This is the screen area where video views and other device views are shown.

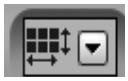
**G. Status bar.** Shows the date and time (or only time), buttons for logging off from the program and for locking the program, a button for showing the help, and the name of the user. You can hide the status bar from the **View** menu.

**H. Alarm list**. Shows active alarms. On the **Search** tab, you can also search past alarms.

**I. Navigator.** The Navigator contains profiles and devices. A profile specifies the devices that you have access to. Select the profile that you want to use from the drop-down menu. After selecting the profile, you can access the devices, for example, cameras, shown in the profile tree. For more information, see "Navigator" on page 14.

## Toolbar

The toolbar contains these buttons:

| Button | Name | Description |
|---|---|---|
| | **Show/Hide Navigator** | **Shows or hides the** Navigator**.** |
| | **Show/Hide Map** | **Shows or hides the Map Tool.** |
| | **Menu Bar** | **If the menu bar is hidden, you can access all menu bar commands by clicking this button.** |
| | **Show/Hide Connections** | **Shows the connection status to recorders.** |
| | **Show/Hide Bookmark List** | **Shows or hides the bookmark list.** |
| | **Show/Hide Alarm List** | **Shows or hides the alarm list.** |
| | **Show/Hide Properties** | **Shows or hides the properties of a selected device. For more information, see "Device properties" on page 20.** |
|  | **View Mode** | **Sets the View Mode for the currently activate components. Please see "Working with device windows" on page 21 for further information.** |
| | **Saved Layouts** | **Shows saved layouts that you can use. For more information, see "Creating layouts" on page 12.** |
| | **Save Layout** | **Adds a new layout.** |
| | **Delete Layout** | **Deletes the selected layout.** |

## Customizing the user interface

These sections show how to customize the user interface:

- "Showing or hiding user interface elements" on page 11
- "User settings" on page 11
- "Creating layouts" on page 12

## Showing or hiding user interface elements

**To show or hide toolbars or windows, do one of the following:**

- On the menu bar, click **View** and then select the element you want to hide or show.
- On the menu bar, click **Windows** and then select the element or window that you want to show or hide.
- On the toolbar, click the button for the element that you want to show or hide.

**To access menu bar commands if the menu bar is hidden:**

- Click the **Menu Bar** button on the toolbar.

**To show the menu bar if it is hidden:**

- Click the **Menu Bar** button , point to **View**, and choose **Menu Bar**.

## User settings

In **User Settings**, you can change the user interface language, the security settings, and your password.

### User interface language

**To change user interface language:**

1. On the menu bar, click **User** and then **User Settings**. The **User Settings** dialog box is shown.
2. In the **Language** list, click the language that you want to use.
3. Click **OK**. The language is changed.

### Protecting Workstation

You can protect Workstation so that it is automatically locked, or you are automatically logged off if you do not use the program for a set time.

**To use automatic protection:**

1. On the menu bar, click **User** and then **User Settings**. The **User Settings** dialog box is shown.
2. Under **Protection,** select one of the following:
   - If you want the program to be locked when you are not using it, select **Automatic lock**.
   - If you want the program to log you off, select **Automatic logoff**.
3. Use the slider to set the wait time.

**NOTE:** *These settings protect only the Workstation program, not the operating system.*

### Changing the logon password

**To change the logon password:**

1. On the menu bar, click **User** and choose **User Settings**. The **User Settings** dialog box is shown.
2. Click **Change Password**.
3. Type the current password in the **Current password** box.
4. Type the new password in the **New password** box and again in the **Confirm new password** box.
5. Click **OK**.

### Automatic logon

**To log automatically into Workstation when the application is started:**

1. On the menu bar, click **User** and choose **User Settings**. The **User Settings** dialog box is shown.
2. Mark the **Use automatic logon** checkbox.
3. Type the current password in the **Password** box.
4. Click **OK**.

## Creating layouts

You can save user interface layouts for different purposes. For example, you can have one layout for the day and another for the night.

*The* **Saved Layouts** *list and the* **Save Layout** *and* **Delete Layout** *buttons.*

A layout specifies the following:

- The windows and views that are shown.
- The dimensions and the positions of the windows and views.
- The profile that was used to create the layout.
- Image filters. For more information about image filters, see “Image tools” on page 67.

**To save a layout:**

1. Put the windows and views how you want them in the layout.
2. Do one of the following:
   - On the menu bar, click **Layouts** and then **Save Layout**.
   - On the toolbar, click **Save Layout**.
3. Type a name for the layout.
4. Click **OK**.

**To delete a layout:**

1. Select the layout that you want to delete.
2. Do one of the following:
   - On the menu bar, click **Layouts** and then **Delete Layout.**
   - On the toolbar, click the **Delete Layout** button.
3. Click **OK** to confirm.

**To apply a layout:**

- In the **Saved Layouts** list, click the layout that you want to use. The selected layout is applied. The profile that was used to create the layout also becomes active.

**TIP:** *On logoff, the application will automatically save the currently used layout and will automatically restart it on the next logon.*

## Help

- Click **Help** and then **Help** to use Help.
- Click **Help** and then **About** to view information about the program version.

# Navigator

These sections show how to use the Navigator:


- "About the Navigator" on page 14
- "Modifying the Navigator" on page 15
- "About profiles" on page 16
- "About device groups" on page 16
- "About devices" on page 16
- "Finding devices" on page 17
- "Using device groups and devices" on page 17
- "Device windows" on page 21


See also:

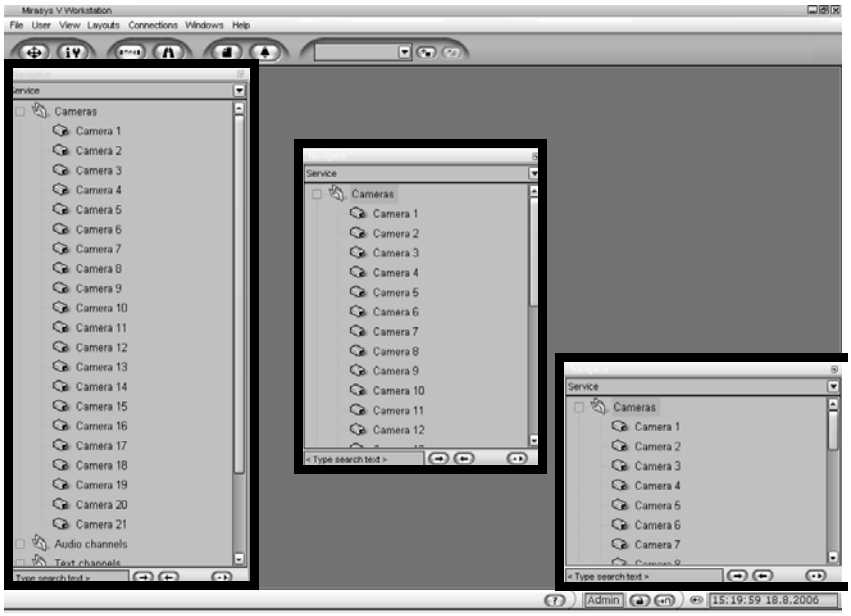

- "Cameras" on page 28
- "Audio" on page 40
- "Video outputs" on page 42
- "Digital outputs" on page 46
- "Digital inputs" on page 49
- "Audio communication" on page 51


## About the Navigator

The Navigator contains profiles and devices. A profile specifies the devices that you have access to. Select the profile that you want to use from the drop-down menu. After selecting the profile, you can access the devices, for example, cameras, shown in the profile tree.

# Modifying the Navigator

You can attach the Navigator to either side of the program window, or you can put it in any position within the program window. You can also change the size of the Navigator. If you need more room for other windows, you can hide the Navigator.




*Examples of how you can position the Navigator.*

**To move the Navigator:**

- Drag the Navigator by its title bar to where you want to put it on the screen.

**To attach the Navigator to the left or right edge:**

- Drag the Navigator by its title bar to the left or right edge of the program window. The mouse pointer must touch the edge of the program window for the Navigator to attach to the edge.

**To hide or show the Navigator:**

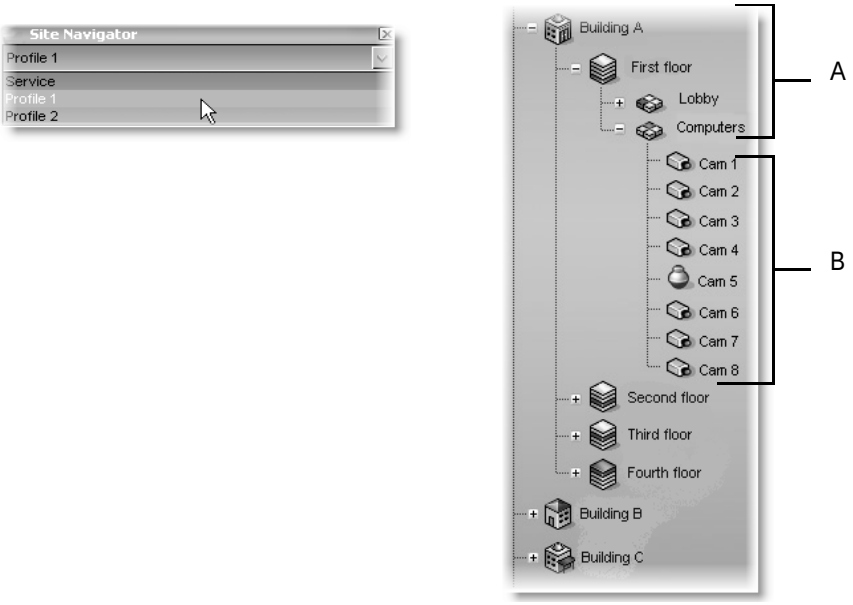
- Click the **Show/Hide Navigator** button on the toolbar.

**To change the size of the Navigator:**

- To change the Navigator's height or width, put the mouse pointer on any one of the four edges of the Navigator. When the mouse pointer changes to a double arrow, drag the edge to the direction you want.
- To make the Navigator proportionally smaller or larger, put the mouse pointer on any corner of the Navigator. When the mouse pointer changes to a double arrow, drag the corner to the direction you want.

## About profiles

A profile specifies the devices (for example, cameras) that you have access to and your usage rights. You can have as many as five profiles, but you can use only one profile at a time. Select the profile that you want to use from the drop-down list.




*On the left: Selecting a profile*
*On the right: A sample profile A. Device groups B. Devices*

**NOTE:** *When an alarm occurs, the device that has triggered the alarm is highlighted on the profile tree.*

## About device groups

The system administrators can put devices into groups, for example, based on their physical location. Alternatively, they can put the same type of devices, for example, all digital inputs, into the same group.

Here are some icons that are used for device groups:

**To see the contents of a device group:**

- Double-click the group icon or click the plus sign (+) adjacent to the group icon.

## About devices

A profile can contain some or all of these devices:

- Cameras (see “Cameras” on page 28)
- Audio channels (see “Audio” on page 40)
- Video outputs (see “Video outputs” on page 42)
- Digital inputs (see “Digital inputs” on page 49)
- Digital outputs (see “Digital outputs” on page 46)
- One audio communication channel (see “Audio communication” on page 51)
- Text channels (see “Text channels” on page 53)

In addition, each profile can be attached to different alarms. For more information about alarms, see “Managing alarms” on page 76.

For more information about devices, see “Using device groups and devices” on page 17.

## Finding devices

You can search for devices and device groups by their name. This is useful if a profile contains lots of groups and devices.

**To search for groups and devices:**

1. Select the profile.
2. At the bottom of the Navigator, click the text box and type part or all of the name of the device or device group. While you type, the program automatically finds the first device or device group that matches the search string.
3. To find the next device or device group that matches the name that you typed, click the **Search Down** button. To search upwards, click the **Search Up** button.

## Using device groups and devices

These sections show how to use device groups and devices:


- “Device icons and device views” on page 18
- “Primary action” on page 20
- “Shortcut menus” on page 20
- “Device properties” on page 20

## Device icons and device views

Different icons are used to indicate device type. In addition, each device on the Navigator has a device view that you can show in the work space:

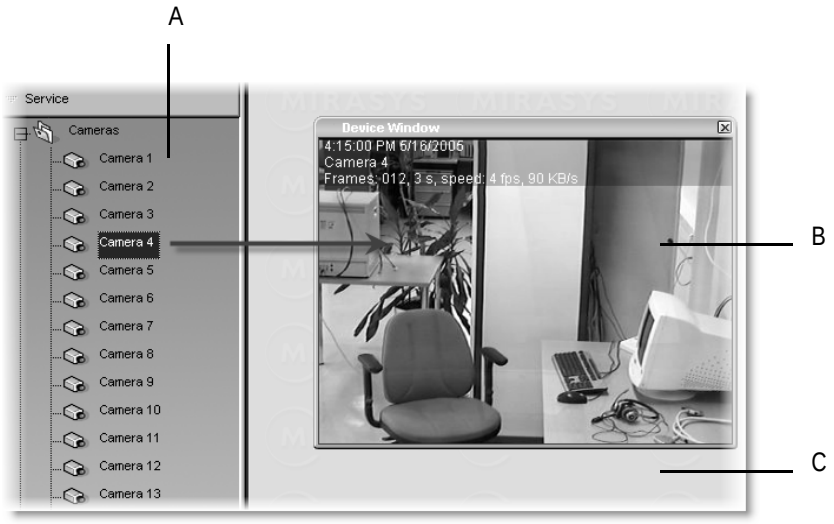
| Icon | Device | Device View |
|---|---|---|
| | **Camera** | **A video view.** |
| | **Audio channel** | **An oscilloscope.** |
| | **Video output** | **A list for selecting the camera that is shown on the monitor and a different list for starting camera tours on the monitor.** |
| | **Digital input** | **An icon that shows the state of the input.** |
| | **Digital output** | **An icon that you can click to open or close the output.** |
| | **Audio communication channel** | **A picture of a telephone with animation and a button for opening the communication channel.** |
| | **Text channel** | **A view that shows text stream data and text events.** |

**NOTE**: *Other icons than those shown in the table can be used for the devices.*

**NOTE:** *When an alarm occurs, the device that has triggered the alarm is highlighted on the Navigator.*

**To show a device view, do one of the following:**

- Right-click a device on the Navigator and then choose **Show View** (or **Show Real-Time View** or **Show Playback View**).
- Drag a device from the Navigator to the work space.
- Select a device, click the **Show Menu** button at the bottom of the Navigator, and choose **Show View**.
- Double-click a device on the Navigator. This works only if the primary action of the device is **Real-time View** or **Playback View**. See “Primary action” on page 20.

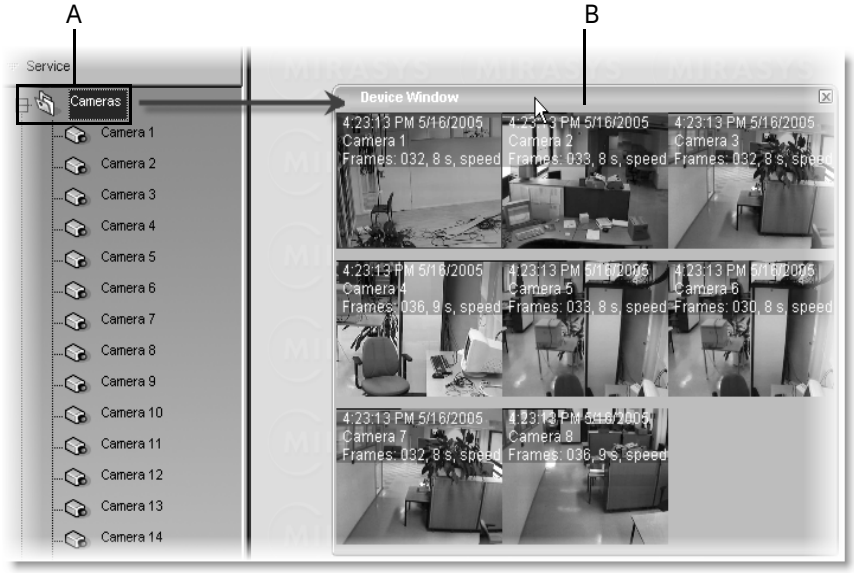



*To open a device view (B), you can drag a device from the Navigator (A) to the work space (C).*

**To show all the devices of a device group in the same device window, do one of the following:**

- Drag the device group to the work space.
- Right-click a device group icon and then choose **Show Real-Time View**.
- Select the device group, click the **Show Menu** button at the bottom of the Navigator, and choose **Show Real-Time View.**

For more information about device windows, see "Device windows" on page 21.




*To show all the devices of a device group in a device window (B), you can drag the device group (A) from the Navigator to the work space.*

## Device state

These symbols show the state of a device:

| Icon | Description |
|---|---|
| | **The device is connected.** |
| | **The device is not in use, or it has not been loaded correctly.** |
| | **No signal.** |
| | **There is no connection to the recorder.** |
| | **Connecting to the recorder.** |

**NOTE:** *When an alarm occurs, the device that has triggered the alarm is highlighted on the Navigator.*

## Primary action

Each device has a primary action, which can be activated by double-clicking the device.

The primary action is device specific and can be set or changed by the system administrator.

The following primary actions are available:

**Real-Time View.** Shows the real-time device view. This option is available for all devices.

**Playback View**. Shows the playback view. This option is available for cameras, audio channels, and text channels.

**No Action**. The system does not do anything. This option is available for all devices.

**Change State (Switch On/Off)**. The state of a digital output is changed. This option is available for digital outputs.

**Pulse**. The system sends a pulse to a digital output. This option is available for digital outputs.

## Shortcut menus

You can operate devices using commands that are in shortcut menus.

**To show a shortcut menu:**

- Right-click a device on the Navigator or right-click a device view.

The commands are explained in the sections that describe each device type.

## Device properties

See information about devices, adjust their properties, and access some commands through the Properties window. For example, you can capture and print images on the **Clipboard** tab of the Properties window.

**To show the Properties window, do one of the following:**

- Select a device and click the **Properties** button on the toolbar.
- Right-click on a device view and choose one of the tabs of the Properties window, for example, **Description** or **Device Information**.
- Right-click a device on the Navigator, and choose one of the tabs of the Properties window, for example, **Description** or **Device Information**.

When the Properties window is shown, its contents change according to the selected device.

Different devices have different tabs in the Properties window. For more information about the tabs, see the sections that describe each device type.

**NOTE:** *You can dock the Properties window by dragging it to the left or right side of the screen.*

# Device windows

You can show more than one device view in a device window. The device views can be from different devices, for example, video views and digital output views. Furthermore, the views can be from different device groups. However, they can not be from different profiles.

The maximum number of device views in a device window in real-time mode is 16, and in a playback mode 8. The maximum number of all views in the work space is 32.

For information about how to customize a device window, see "Working with device windows" on page 21.

*A device window with two video views, a digital output view, and an audio view.*

## Working with device windows

You can change the shape and the dimensions of a device window, remove views from it and add views to it, and also change the order of the views. This applies to real-time and playback mode.

### View mode

You can use automatic view layouts to quickly organise the contents of the device window.

**To use automatic layouts:**

1. Right-click on the device window and select **View Mode**, or click on the **View Mode** button on the toolbar (please see "Toolbar" on page 10 for further information).
2. Select the layout from the layout list, or select **Dynamic** to disable automatic layouts.

**NOTE:** *If you use automatic layouts, you cannot change the shape or dimensions of the device window. To change the shape or dimensions of the device window, select Dynamic from the layout list.*

### Maximizing and minimizing

**To maximize the device window size, do one of the following:**

- Double click on the device window title bar.
- Click on **Maximize** button on the upper right corner of the device window.

**To minimize the device window size:**

- Click on **Minimize** button on the upper right corner of the device window.

**To restore a maximized or minimized device:**

- Click on **Restore** button on the upper right corner of the device window.

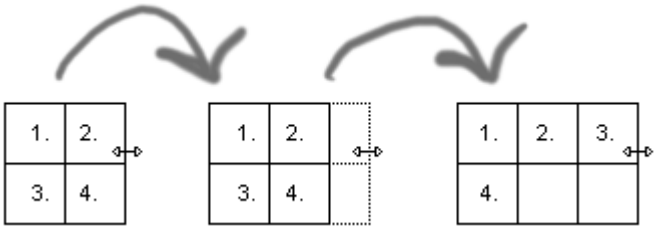
**To maximize the view from a single camera:**

When viewing multiple cameras in the device window, you can double click on a single camera view to display the view from that camera in the device window. You can restore the original layout by double clicking on the camera view.

### Shape

**To change the shape of the device window:**

- Put the mouse pointer on the edge of the device window, and when the pointer changes to a double-arrow, drag the edge to the direction you want.

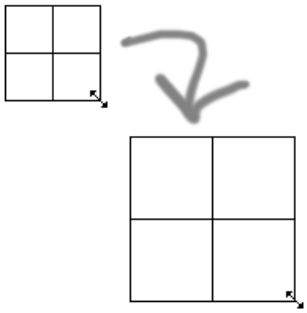



*The device views in a device windows are put in sequence from left to right, starting from the top left corner.*

### Dimensions

**To change the dimensions of a device window:**

- Drag the device window from one corner or from one edge. Each device view is scaled accordingly.

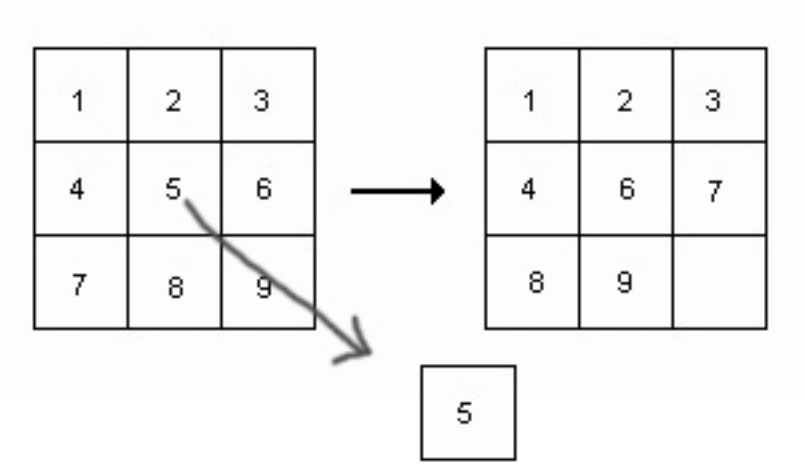


*You can change the dimensions of a device window by dragging the device window from one corner.*

### Move Apart

**To move a device view away from a device window, do one of the following:**

- Drag the device view from the device window to the work space. The removed device view is shown as the only device view in a new device window.
- Right-click the device view and choose **Move Apart**.




*You can move apart device views from a device window.*

### Close

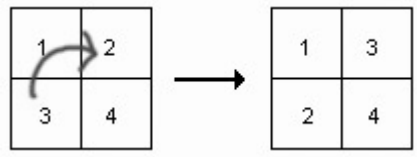
**To close a view from a device window:**

- Right-click on the device view and choose **Close**.

### Change order

**To change the order of the devices views:**

- Drag a view to a new position.



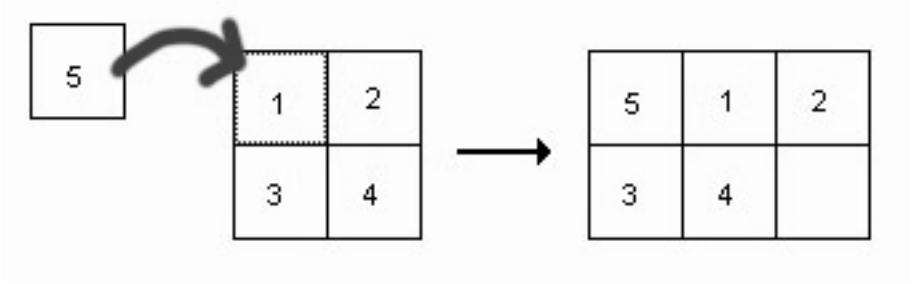

*Changing the order of device views in a device window.*

### Add device views

You can always add new device views to a device window, even if there are no empty spaces in it.

**To add a device view:**

- Drag the device view from the Navigator or from the work space to the device window.




*Adding a device view to a device window*

**To add a group of device views:**

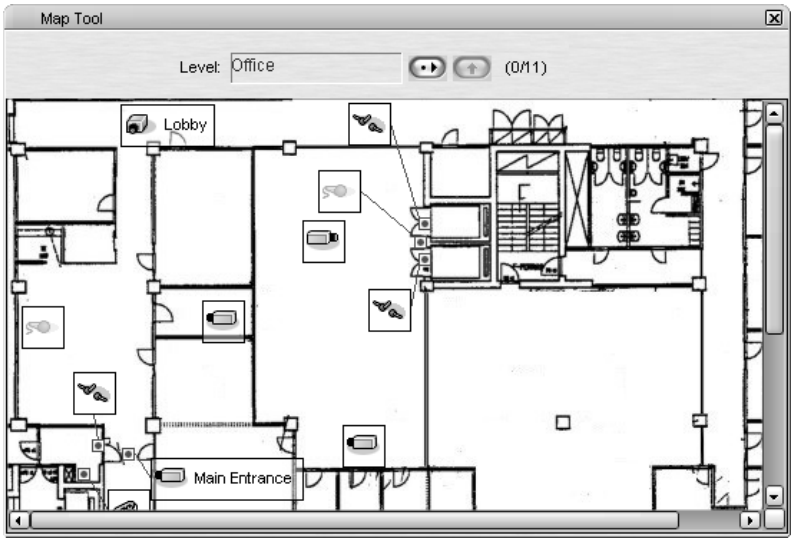
- Drag a device group from the Navigator to the device window.

# Map Tool

To make it easier to access cameras and other devices, the system can contain maps and floor plans. Maps and floor plans give a visual overview of a target site, showing where cameras, I/O devices, and microphones are located. Furthermore, you can double-click the device icons to access the devices, for example, to open video views.

When an alarm occurs, the device that has triggered the alarm is highlighted on the map.

System administrators can add maps in the System Manager program.




*Map Tool. By clicking the icons you can access the devices.*

**To show or hide the Map Tool:**

- Click the **Show Maps** button on the toolbar.

These sections show how to use the Map Tool:


- "Synchronizing the Navigator and the Map Tool" on page 25
- "Navigating through maps" on page 26
- "Using devices on maps" on page 26


## Synchronizing the Navigator and the Map Tool

By default, the Navigator and the Map Tool are synchronized. This means that when you click a device or device group on the Navigator, the corresponding map is automatically shown in the Map Tool.

**To turn synchronization on or off:**

1. Click **User** and then **Map Tool Settings**.
2. Select one of the three options:
   - **Don't synchronize**. Select to turn synchronization off. To show the corresponding map when synchronization is off, you can right-click a device on the Navigator and choose **Show on Map**. And to show a device on the Navigator, right-click the device icon on the map and choose **Show on Navigator**.

- **Active device groups only**. If you click a device group on the Navigator, the corresponding map is shown. However, clicking a device in another group than the current will not open the corresponding map.
- **Active devices and device groups**. This is the default option. If you click a device group or a device on the Navigator, the corresponding map is shown. In addition, the selected device is shown on the map. Similarly, if you click a device or device group on a map, the same device or device group is shown on the Navigator.

**NOTE***: The Map Tool must be open in the work area for synchronization to work.*

## Navigating through maps

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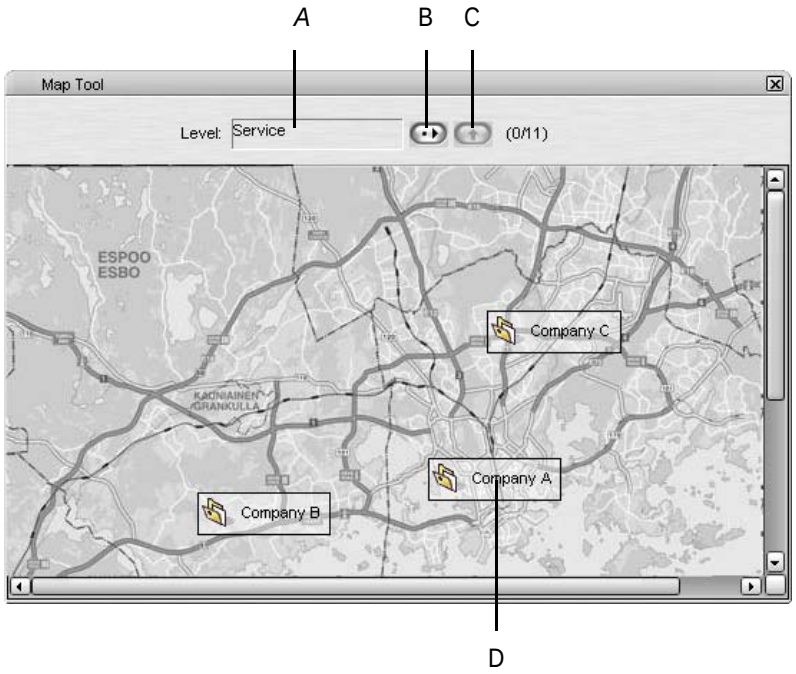



*Map Tool. A. The current map level B. Click to show a different map C. Click the* **Up** *arrow to move to a higher level D. Double-click a group icon to move to a map on a lower level*

**To move to a lower level map, do one of the following:**

- Select the level from the **Level** list.
- Double-click a device group icon on the map.

**To move to a higher level map, do one of the following:**

- Select the level from the **Level** list.
- Click the **Up** arrow.

## Using devices on maps

You can access the same functions on a map as on the Navigator. For example, double-click a camera icon to view real-time video from it (default setting). By right-clicking a device you can see what functions are available.

For more information, see these sections:


- "Cameras" on page 28
- "Audio" on page 40
- "Video outputs" on page 42

- “Digital outputs” on page 46
- “Digital inputs” on page 49
- “Audio communication” on page 51
- “Text channels” on page 53

# Cameras

These sections show how to operate cameras:


- "About cameras" on page 28
- "Camera icons" on page 28
- "Monitoring real-time video" on page 28
- "Monitoring local video" on page 29
- "Playing back video" on page 30
- "Camera menu" on page 30
- "Camera properties" on page 31
- "Camera tours" on page 33
- "Dome cameras" on page 34


## About cameras

There are two types of cameras:

- Fixed cameras
- Dome cameras

You can operate cameras as follows if you have the usage rights:

- See real-time video.
- Play back recorded video.
- Export images and video clips.
- Control dome cameras

In addition, when Workstation is used locally, on the same computer as the recorder, you can monitor video directly from local cameras. For more information, see "Monitoring local video" on page 29.

## Camera icons

These icons identify cameras on the Navigator and on maps:

System administrators can select the icons in System Manager.

## Monitoring real-time video

**To monitor real-time video from one camera, do one of the following:**

- Drag the camera from the Navigator to the work space.
- Right-click the camera and choose **Show Real-Time View** from the menu.
- Select the camera, click the **Show Menu** button at the bottom of the Navigator, and choose **Show Real-Time View.**

In addition, if real-time video has been set as the primary action for the camera, you can also double-click the camera on the Navigator or on a map to show real-time video.

A small symbol in the upper right corner of the video view shows what the camera is currently doing. For more information about the symbols, see "Displayed Device Information" on page 32.

**To monitor real-time video from multiple cameras:**

- Right-click a device group icon and choose **Show Real-Time View.** This opens a device window that contains a real-time window from all the cameras in that device group. See also “Device windows” on page 21.
  **NOTE**: *If the group contains more than 16 devices, only the first 16 are shown.*

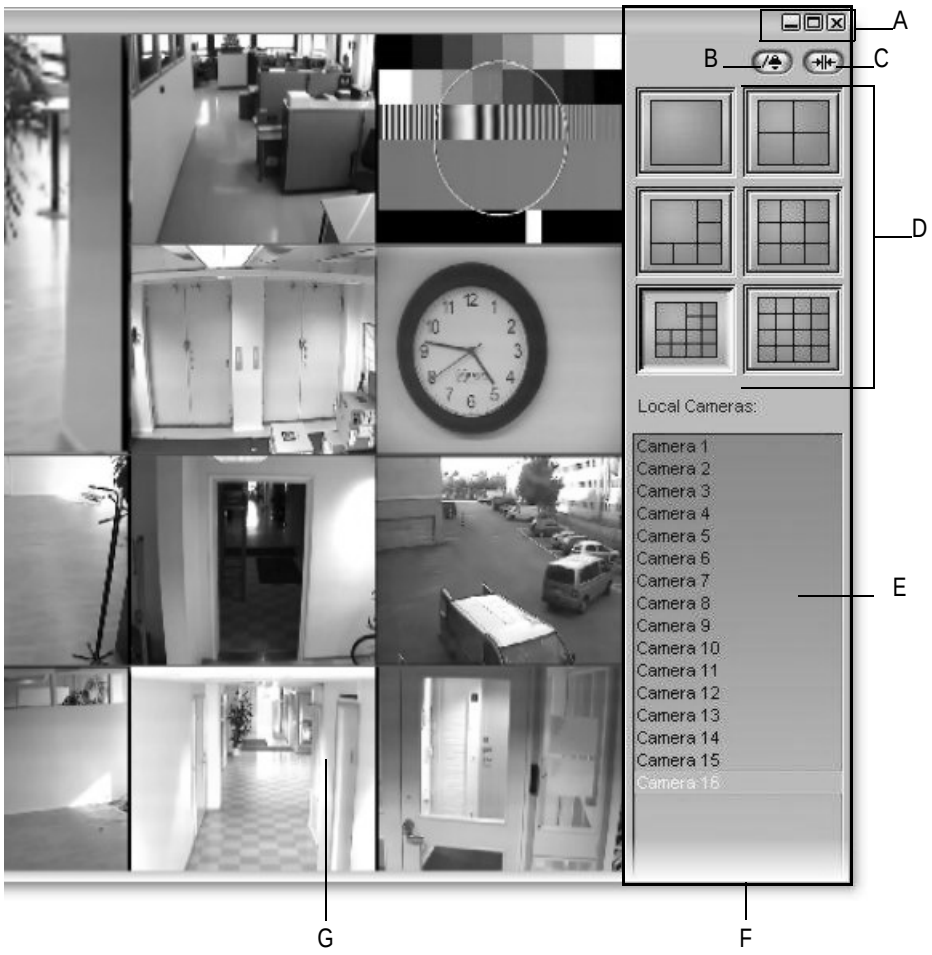
## Monitoring local video

Local monitoring means that video is streamed directly from the capture card to the display adapter. It is available only when the Workstation program and the recorder are on the same computer. In addition, the cameras must be in your profile, and you must have the right to monitor local video from them. Local monitoring is not available on Mirasys N series NVRs.

Unlike standard real-time viewing, local monitoring does not cause processor load for the recorder. Thus, when applicable, local monitoring should be used instead of real-time viewing.

**To monitor video from local cameras, do one of the following:**

- On the menu bar, click **Windows** and choose **Local Cameras**.
- On the tool bar, click the **Local Cameras** button .




*Local monitoring. A. Minimize, Maximize and Close buttons B. Shows the alarm list C. Click to hide the control panel D. Click one of these buttons to change how many video views are shown E. Available cameras F. Control panel G. Image area*

**To change how many video views are shown:**

- Click one of the screen format buttons (D).

**To select cameras:**

- Drag the camera from the camera list on the right to the image area.

**To change the order of cameras:**

- Drag a camera to a new position in the image area.

**To maximize the camera display size, do one of the following:**

- Double click on the local view title bar.
- Click on **Maximize** button on the upper right corner of the local view title bar.

**To maximize the view from a single camera:**

- When viewing multiple local cameras, you can double click on a single camera view to display the view from that camera in the device window. You can restore the original layout by double clicking on the camera view.

## Playing back video

**To play back video from one camera, do one of the following:**

- Right-click a camera on the Navigator or on a map and choose **Show Playback View**.
- Right-click a camera view and choose **Show Playback View**.
- Select a camera from the Navigator, click the **Show Menu** button at the bottom of the Navigator and choose **Show Playback View**.

Playback features are described in more detail in “Playback” on page 55.

## Camera menu

Use the camera menu to access camera properties and functions, for example, to play back recorded video. Different options are available in playback and real-time mode. In addition, some options are only available if the camera view is open.

**To show the camera menu, do one of the following:**

- Right-click on a video view.
- Right-click a camera on the Navigator or on a map.
- Select the camera from the Navigator and click the **Show Menu** button in the lower right corner of the Navigator.

**The camera menu can contain these commands:**

**Move Apart.** Moves the video view from a device window to a device window of its own. This command is shown only if there is more than one device view in a device window.

**Close.** Closes the video view.

**Dome Control.** Activates dome control. This command is available for only supported dome cameras that have been correctly installed and configured.

**Description.** Shows the **Description** tab of the Properties window.

**Displayed Device Information.** Shows the **Displayed Device Information** tab of the Properties window, where you can select what data are shown in the video view.

**Update Rate.** Shows the **Update rate** tab of the Properties window, where you can set the update interval of the video view.

**Dome Properties.** Shows the **Dome Control** tab of the Properties window, where you can start preset camera tours and select preset positions. From the tab, you can also access camera tour settings. This command is available only for dome cameras and only in real-time mode.

**Capture.** Opens the **Clipboard** tab of the Properties window, where you can capture, export and print images.

**Reference Image.** Shows an image that you can compare to the current view. By comparing views you can, for example, make sure that the camera is pointed at the right direction.

**Image Tools.** Shows image tools. With the image tools, you can enhance images, for example, adjust brightness or contrast.

**Show Playback View.** Opens a playback view from the same camera. This command is available only in real-time mode.

**Show Real-time View.** Opens a real-time view from the same camera. This command is available only in playback mode and if the real-time view is not already shown on the screen.

**Show on Map**. Shows where the camera is located on a map. This command is shown on the Navigator.

**Show on Navigator**. Shows where the camera is located on the Navigator. This command is shown on the Map Tool.

**Activity Search**. Shows the Activity Search tool. This command is available only in playback mode.

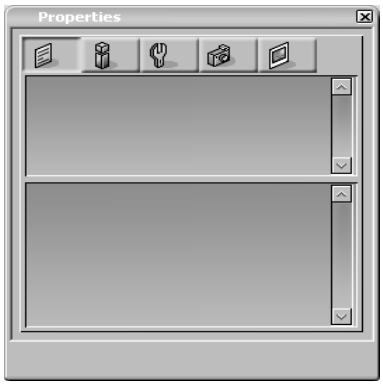
**Motion Search**. Shows the Motion Search tool. This command is available only in playback mode.

**Add to Bookmarks**. Adds the image or audio sample to the **Bookmarks** list. This command is available only in playback mode.

**Camera Tour**. Starts a camera tour where video is shown in sequence from each camera that belongs to the same device group. This command is shown only if there is more than one video view in a device window.

## Camera properties

Camera properties are shown in the Properties window. Some of the tabs in the Properties window are shown only if the device view is currently shown in the work space. Dome cameras have an additional **Dome Control** tab. For more information about how to open the Properties window, see “Device properties” on page 20.




*Camera properties window*

The Properties window can contain these tabs:

#### Description

The description tab contains a general description of the camera and an administrative description, which is shown to system administrators only. System administrators can add descriptions in the System Manager program.

#### Displayed Device Information

From this tab, you can select what data are shown in the video view. These data are available:

- **Name**. The name of the camera is shown.
- **Group**. The name of the device group is shown.
- **Status**.The status of the camera is shown with a symbol in the upper right corner of the video view:

| Symbol | Description |
|---|---|
| **(no symbol)** | **Real-time** |
| | **Playback** |
| | **Recording** |
| | **Playing back alarm** |
| | **Camera tour is running** |
| | **Dome camera** |

- **Time**. The time of the video.
- **Date**. The date of the video.

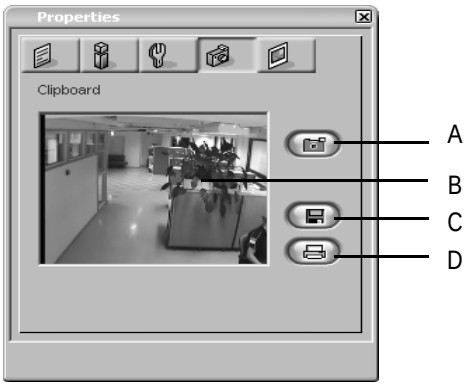
#### Image Update Rate

From this tab, you can select how often the video view is updated.

- **Update on motion only.** Select this option to update the real-time video view only when motion is detected**.**
- **Update interval.** Select this option to update the real-time view at regular intervals even when no motion is. Set also the update rate. For example, if you set the interval to 4 s, the video view is updated every four seconds if no motion is detected; if motion is detected, the real-time view is updated automatically.

### Clipboard

You can update the image that is shown on this tab by clicking the **Capture** button. You can then save or print the image by clicking the **Save** or **Print** button.



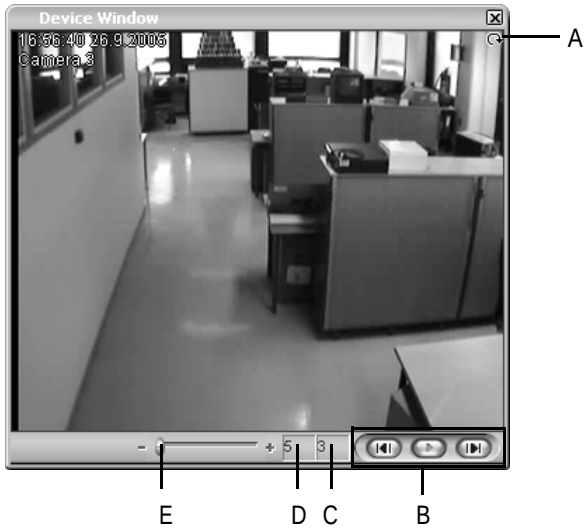

*The Clipboard in the* Properties *window. A. Capture B. Captured image C. Save D. Print.*

### Reference image

To make sure that the camera shows and records the right images, you can compare the video view to a reference image that is shown on this tab. For example, you can make sure that the camera is pointed at the right direction.

## Camera tours

In a camera tour, video is shown in sequence from each camera that belongs to the same device group. Alternatively, you can start a camera tour from a customized device window.




*Camera tour window. A. The camera tour symbol shows that a tour is running B. Buttons for manual control of the tour C. The remaining time, in seconds, that this camera will be shown D. The time that each camera view is shown, in seconds (dwell time) E. Slider for changing the dwell time*

**To start a camera tour, do one of the following:**

- Right-click a device group icon on the Navigator and choose **Camera Tour.**

- Right-click on a camera view in real-time mode and choose **Camera Tour.** This command is available only if there is more than one camera view in the same device window.

If the device window contains other types of devices in addition to cameras, only the cameras are shown in a camera tour view. The other devices are shown in their own views.

**To control a camera tour:**

In camera tour mode, the window has three buttons and a slider that you can use to manually control the tour.

| Button | Description |
|---|---|
| | **Previous camera** |
| | **Pauses or continues the tour** |
| | **Next camera** |
| | **Sets the dwell time** |

**To stop a camera tour:**

- Right-click the camera tour view and click **Camera Tour** to remove the check mark.

## Dome cameras

Dome cameras (PTZ cameras) are shown with the dome camera icon on the Navigator or on a map.

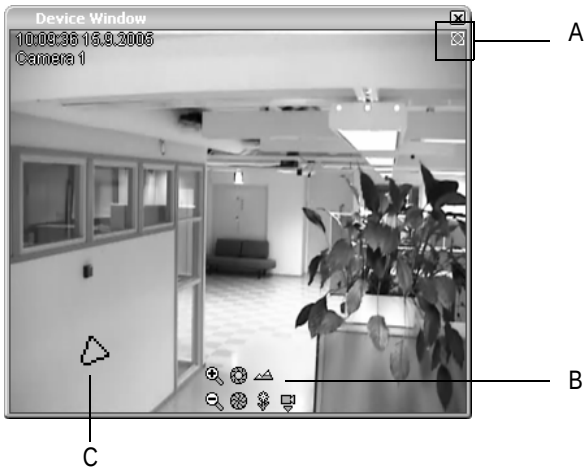
**To activate dome camera control, do one of the following:**

- Right-click the dome camera on the Navigator or on a map, and choose **Dome Control** from the menu.
- Click the dome camera symbol on the upper right corner of the camera view.
- Right-click on a video view, and choose **Dome Control** from the menu.

When dome control is active, the zoom, iris, focus and dome preset controls are shown in the view.

It should be noted, that in some installations, the dome camera controls may have a customized release period. In these cases, the dome camera controls are released if they are idle for more than a specified time. If the camera controls are released, they need to be reactivated to control the dome camera.

**NOTE:** *If the dome camera controls include a release period, a timer displaying the remaining time until release will be shown in the upper right corner of the camera view after the dome camera controls have been idle for a time.*




*A. Dome camera symbol B. The zoom, iris, focus and preset controls C.The arrow shows the turn direction and speed*

Dome control features are described in these sections:

- "Zoom, iris and focus" on page 35
- "Pan and tilt" on page 36
- "Preset positions and tours" on page 36

## Zoom, iris and focus

When dome control is active, the zoom, iris and focus controls are shown in the video view.

**To use zoom:**

- To zoom in, click and hold .
- To zoom out, click and hold .

Or:

- Zoom in and out by using the mouse scroll button.

**To adjust brightness (iris):**

- To make the image brighter, click and hold .
- To make the image darker, click and hold .

**To adjust sharpness (focus):**

- To sharpen the far distance, click and hold .
- To sharpen the near distance, click and hold .

## Pan and tilt

You can move a dome camera to eight directions as shown in this figure.

*You can move a dome camera to eight directions as shown by the arrows.*

When you point on the window with the mouse, the pointer changes to an arrow. The arrow shows the direction that the camera will move to if you click on the view.

**To pan and tilt the camera:**

- Click on the video view and keep the mouse button pressed. The camera moves as long as you keep the mouse button pressed or until the camera is in its extreme position.

### Speed

There are three speed areas in the dome camera window. The mouse pointer shows the speed of the camera:

**Inner area**: Slow speed

**Middle area:** Normal speed

**Outer area:** High speed

## Preset positions and tours

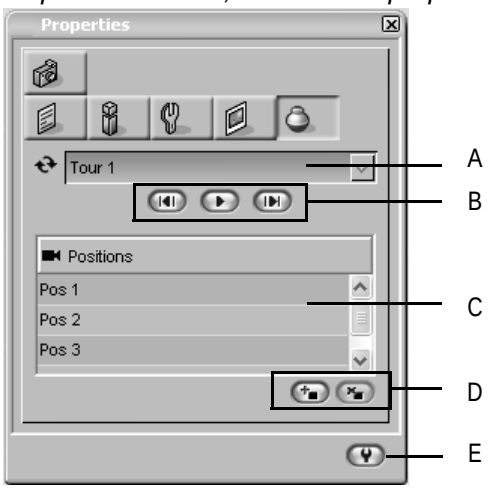
You can save dome camera positions for easy access, as well create dome camera tours, in which the camera moves automatically from one position to another. Dome camera positions and tours can be created, edited, deleted and viewed in the **Dome Control** tab in the **Properties** window. In addition, the positions and tours can be viewed directly through the dome controls as described below.

### Opening the Dome Control tab

**To show the Dome Control tab, do one of the following:**

- Right-click the dome camera in the Navigator and choose **Dome Properties**.
- Right-click the dome camera view and choose **Dome Properties**.

**NOTE**: *Dome camera control must be active. For more information about the Properties window, see "Device properties" on page 20.*




*The Dome Control tab of the* Properties *window. A. Camera tours B. Buttons for controlling camera tours C. Preset positions D. Buttons for adding and deleting preset positions E. Edit camera tours*

### Moving the dome camera to a preset position

**To move a camera to a preset position, do one of the following:**

- Right-click the dome camera on the Navigator or on a map, point to **Select Position** and select the position that you want to move the camera to.
- On the **Dome Control** tab in the Properties window, select the position from the **Saved Positions** list.
- Activate dome camera control. Click the camera icon on the lower right side of the control tools and select the position that you want to move the camera to.

### Starting a camera tour

**To start a camera tour, do one of the following:**

- Right-click the dome camera on the Navigator or on a map, point to **Run Tour** and select the tour that you want to start.
- On the **Dome Control** tab in the Properties window, select the tour from the **Camera Tours** menu and click **Start/Stop Tour** .
- Activate dome camera control. Click the camera icon on the lower right side of the control tools and select the position that you want to move the camera to.

**NOTE:** *In the Dome Control tab in the Properties window, the current position is always shown in the Preset Positions list while a tour is running.*

*You can use the Next and Previous buttons to manually move to the subsequent or previous position without stopping the tour.*

### To stop a tour:

**To stop a camera tour, do one of the following:**

- If you have started the tour through the **Dome Control** tab, you can stop the tour by releasing the **Start/Stop Tour** button.
- If you have started the tour by selecting the tour through the camera control tools or through the navigator pane or map tool, you can stop the tour by turning the camera manually or selecting a preset position from the **Presets** list.

### Adding and deleting preset positions

**NOTE**: *You must activate dome control before you can add or delete positions.*

**To add a preset position:**

1. Turn the camera to the position that you want to save. You can also adjust zoom, focus and iris.
2. On the **Dome Control** tab of the Properties window, click the **Add Preset Position** button below the **Saved Positions** menu, and choose **Save Position** from the menu.
3. Type a name for the position, and click **OK**.

**To delete a preset position:**

1. On the **Dome Control** tab of the Properties window, select the position that you want to delete.
2. Click the **Delete** button adjacent to the **Presets** menu and choose **Delete Position**.
3. Click **OK**.

### Adding and deleting camera tours

**NOTE**: *You must activate dome control before you can add or delete camera tours.*

**To add a camera tour:**

1. On the **Dome Control** tab of the Properties window, click **Edit Camera Tours**.
2. Click the **Add Camera Tour** button adjacent to the **Camera Tours** list.
3. Type a name for the tour and click **OK**.
4. From the **Preset positions** list, select the position that you want to add to the tour, and click **Add**.
   **TIP**: *To select more than one camera, keep the SHIFT key pressed and click the first and last camera that you want to select. To add a camera to a selection or to remove a camera from a selection, keep the CTRL key pressed and click the camera that you want to add or remove.*
   **NOTE:** *To change the order of the presets, drag a preset to a new position. To remove a preset from the tour, select the position and click Remove.*
5. In the **Tour Positions** list, click the position you added and then set the time that the camera will stay in that position (**Dwell Time**) and the speed at which the camera will move to the subsequent position (**Move Time**).
6. Click **OK** to save the tour.

**NOTE:** *When preset positions are saved on the recorder, their number is not limited. However, in some camera models, preset positions are saved on the camera, which means that their number is usually limited. Tours are always saved on the recorder, and their number is not limited. For more information about the limitations, see the document plugin.pdf.*

**To delete a tour:**

1. In **Edit Camera Tours**, select the tour that you want to delete.
2. Click **Delete Tour**.
3. Click **OK**.

### Home position

You can set a preset position or a camera tour as a home position for a dome camera. If the camera is not operated for a set time, it is automatically moved to the home position.

**To set a home position:**

1. In **Edit Camera Tours**, select the preset position or camera tour that you want to set as a home position.
2. Set the delay time after which the camera is moved to the home position.
3. To force the camera to the home position from a preset position, select the **Move to home position form a preset position** check box.
4. To force the camera to the home position after the set time even if a tour is running, select **Move to home position from a running camera tour**.
5. Click **OK**.

### Alarm functions

A dome camera can move to a preset position or start a pre-programmed dome camera tour when an alarm occurs. System administrators can set this alarm function in System Manager.

### Camera reservation

Only one user can control a dome camera at a time. However, you can take over dome camera control from another user if you have been given the right to do so.

# Audio

Each recorder in the DVMS system can have a number of audio channels. You can listen to real-time and recorded audio if you have been given the right to do so.

These sections show how to use audio channels:


- "Audio channel icons" on page 40
- "Opening audio channels" on page 40
- "Opening audio channels" on page 40
- "Audio view" on page 40
- "Audio playback" on page 41
- "Audio search" on page 41
- "Audio properties" on page 41


## Audio channel icons

These icons indicate audio channels in the Navigator:

System administrators can select the icons in System Manager.

## Opening audio channels

**To open an audio channel, do one of the following:**

- Drag the channel from the Navigator to the work space.
- Right-click the channel on the Navigator or on a map and choose **Show Real-Time View**.
- Select the channel from the Navigator, click the **Show Menu** button at the bottom of the Navigator, and choose **Show Real-time View**.

See also "Device windows" on page 21.

## Audio view

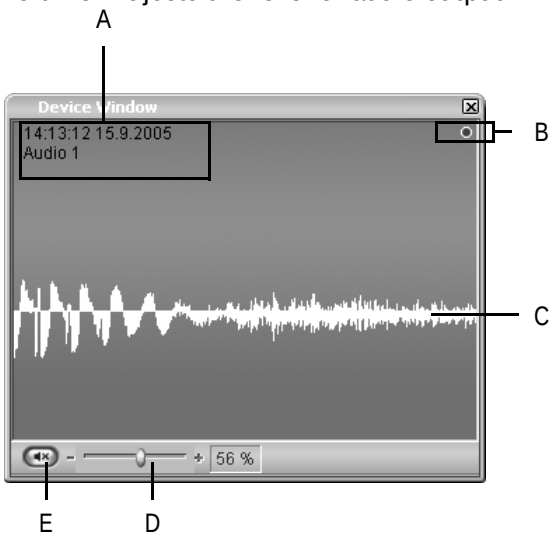
An audio view has these parts:

**Name, date, time, status**: As in the camera view.

**Oscilloscope**: Visualizes the frequencies of the audio signals.

**Mute**: Click to mute audio and click again (release the button) to listen to audio.

**Volume**: Adjusts the level of audio output.




*Audio view. A. Date, time and name of the channel B. Status symbol. In this example, the symbol shows that the system is currently recording audio C. Oscilloscope D. Volume E. Mute*

You can operate an audio view like other device views. For more information, see "Using device groups and devices" on page 17.

## Audio playback

You can play back audio only forward and at normal speed. In fast playback, audio is not played, but the current position is shown in the graph.

**To play back recorded audio, do one of the following:**

- Right-click an audio channel on the Navigator or on a map and choose **Show Playback View**.
- Right-click an audio view and choose **Show Playback View**.
- Select an audio channel from the Navigator, click the **Show Menu** button at the bottom of the Navigator and choose **Show Playback View**.

## Audio search

To examine recorded audio, click the **Activity Search** button on the playback panel. For more information, see "Activity search" on page 59.

## Audio properties

Audio channels have these tabs in the Properties window:

**Description:** Contains a description of the audio channel.

**Displayed Device Information:** From this tab, you can choose what data are shown in the audio view.

**Update Rate:** From this tab, you can select if a channel is updated continuously or only when the system detects audio.

**To show the Properties window, do one of the following:**

- Make sure that the audio view is shown in the work space and then click the **Show/Hide Properties** button on the toolbar.
- Right-click on the audio view and choose one of the tabs of the Properties window (**Description**, **Device Information** or **Update Rate**).

# Video outputs

You can show video on video monitors that have been connected to the video outputs of the recorder.

Video outputs are not available on Mirasys N series NVRs.

These sections show how to control the outputs:


- "Selecting cameras" on page 42
- "Running camera tours" on page 42
- "Video output view" on page 42
- "Video output properties" on page 43
- "Modifying and adding camera tours for monitors" on page 44


## Selecting cameras

**To select the camera that is shown on a monitor, do one of the following:**

- Right-click the video output (monitor) on the Navigator or on a map, point to **Select Camera** and click the camera that you want to show on the monitor.
- Open the video output view, for example, by dragging the video output (monitor) to the work space. Then, in the camera list, click the camera that you want to show.

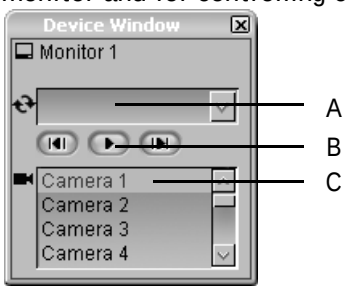
## Running camera tours

**To start a camera tour, do one of the following:**

- Right-click the video output (monitor) on the Navigator or on a map, point to **Run Tour** and click the tour that you want to run on the monitor.
- Open the video output view, for example, by dragging the video output (monitor) to the work space. Then, in the **Camera Tours** list, click the tour that you want to start. Then click **Play**.

## Video output view

Use the video output view for selecting the camera that you want shown on a monitor and for controlling camera tours (camera sequences).




*A video output view. A. Saved camera tours B. Starts the selected camera tour C. Shows the selected camera on the monitor*

**To show the monitor view, do one of the following:**

- Drag the monitor from the Navigator to the work space.
- Right-click the monitor on the Navigator or on a map and choose **Show View**.

- Select the monitor from the Navigator, click the **Show Menu** button at the bottom of the Navigator, and choose **Show View**.

**To select the camera that is shown on the monitor:**

- Right-click the video output on the Navigator or on a map, point to **Select Camera**, and then select the camera from the list.
- Select the camera from the camera list in the video output view.

**To start a camera tour, do one of the following:**

- Right-click the video output on the Navigator or on a map, point to **Run Tour**, and select the tour from the list.
- Select the tour from the **Camera Tours** list on the video output view and click **Play**.

**To stop a camera tour:**

- Release the **Play** button.

If restarted, the tour will start from the first camera.

**To move to the next or previous camera manually:**

- Click the **Previous Camera** or **Next Camera** button. Note that manual control stops a running camera tour.

## Video output properties

The Properties window contains two tabs for video outputs:

**Description.** Contains an optional description of the output and possibly also a description that is shown only to system administrators.

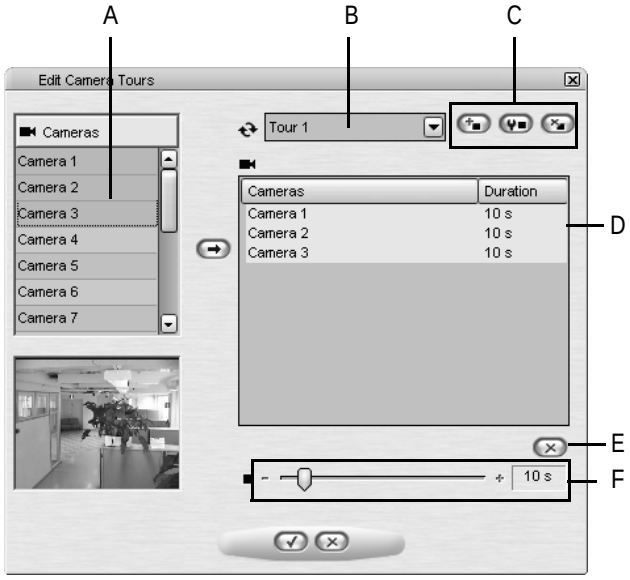
**Displayed Device Information.** From this tab, you can select what data are shown in the video output view (monitor name, date, time).

**To show the Properties window, do one of the following:**

- Make sure that the video output view is shown in the work space and then click the **Show/Hide Properties** button on the toolbar.
- Right-click on the video output view and choose one of the tabs of the Properties window (**Description** or **Device Information**).

# Modifying and adding camera tours for monitors

You can modify and add camera tours if you have been given the right to do so.




*The* **Edit Camera Tours** *dialog. A. Available cameras B. List of camera tours C. Buttons for adding, modifying and deleting camera tours D. The cameras that are included in the selected camera tour. The dwell time is shown adjacent to each camera. E. Deletes the selected camera from the tour F. Sets the dwell time for the selected camera.*

**To add a camera tour:**

1. Right-click a monitor on the Navigator or on a map and choose **Edit Camera Tour**. The **Edit Camera Tours** dialog box is shown.
2. Do as follows:
   - **a** Click the **Add Camera Tour** button adjacent to the **Camera Tours** list, and type a name for the tour.
   - **b** From the left pane, select the cameras that you want to add to the tour and click **Add**. Alternatively, select the cameras and drag them to the right pane. **TIP**: To select more than one camera, keep the SHIFT key pressed and click the first and last camera that you want to select. To add a camera to a selection or to remove a camera from a selection, keep the CTRL key pressed and click the camera that you want to add or remove.
   - **c** To change the order of the cameras, drag a camera to a new position.
   - **d** To remove a camera from the tour, select the camera and click the **Remove** button.
   - **e** To change the dwell time for a camera, select the camera and then drag the slider below the list.
3. To save the tour, click **OK**.

**To modify a camera tour:**

- From the tours list, select the tour that you want to modify. Then you can modify these settings:
  - To change the name of the tour, click the **Change Tour Name** button and then type a new name for the tour.
  - To change the order of the cameras, drag a camera to a new position in the list.

- To remove a camera from the tour, select the camera, and then click the **Remove Camera** button.
- To add a camera to the tour, select the camera from the left pane, and click **Add**.

**To delete a camera tour:**

1. From the **Camera Tours** list, select the tour that you want to delete.
2. Click the **Delete Tour** button adjacent to the list.
3. To save the changes, click **OK**.

# Digital outputs

These sections show how to use digital outputs to control external devices, for example, doors, gates or lights:

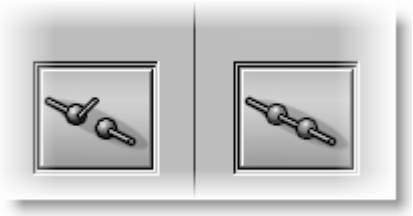

- "Digital output icons" on page 46
- "Digital output view" on page 46
- "Digital output menu" on page 47
- "Digital output properties" on page 47


## Digital output icons

These icons identify digital outputs on the Navigator and on maps:

## Digital output view

The digital output view shows the state of an output (open/closed). You can also control outputs from the view.



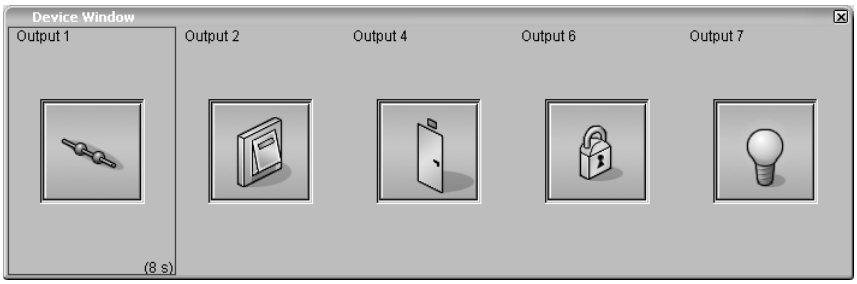
*Two digital output views.The first output is open, the second closed. Other icons than these are possible for digital outputs.*

**To show the digital output view, do one of the following:**

- Drag the digital output from the Navigator to the work space.
- Right-click the digital output on the Navigator or on a map, and choose **Show View**.
- Select the digital output from the Navigator, click the **Show Menu** button at the bottom of the Navigator, and choose **Show View**.

**To change the state of a digital output:**

- Click the icon in the digital output view. The state of the output is changed or a pulse is sent to the output, depending on what is the primary function of the output. The primary function is set in System Manager.
- To access both commands (**Change State (Switch On/Off)** and **Pulse**), open the Properties window and click the **Output Control** tab. For more information about the tab, see "Digital output properties" on page 47.




*Digital output views in a device window. When using the pulse function, the remaining time of the pulse is shown in the view (as in the first view from the left).*

## Digital output menu

The digital output menu contains these commands:

**Show View**. Shows the digital output view that you can use to control the output.

**Show on Map**. Shows where the camera is located on a map. This command is shown on the Navigator.

**Show on Navigator**. Shows where the camera is located on the Navigator. This command is shown on the Map Tool.

**Change State (Switch On/Off)**. This command changes the state of the output. If the output is closed, it is opened. If it is open, it is closed. The output stays in the changed state until it is changed again manually or as a result of an alarm.

**Pulse**. The state is changed only for a specified time, and then the output is returned back to the state it was in. Specify the duration of the pulse on the **Digital Output** tab of the Properties window.

**Description**. Shows the **Description** tab of the Properties window.

**Displayed Device Information**. Shows the **Displayed Device Information** tab of the Properties window, where you can select what data are shown in the digital output view.

**Output Control**. Shows the **Output Control** tab of the Properties window, where you can control the output.

**To show the menu, do one of the following:**

- Right-click the digital output on the Navigator or on a map.
- Select the digital output from the Navigator and then click the **Show Menu** in the lower right corner of the Navigator.
- Right-click on the digital output view.

## Digital output properties

Digital outputs have these tabs in the Properties window:

#### Description

The description tab contains a general description of the digital output and an administrative description, which is shown only to system administrators. Only system administrators can add descriptions in System Manager.

#### Displayed Device information

From this tab, you can select what data are shown in the view.

**Name**. The name of the output is shown.

**Device group**. The name of the device group is shown.

**Output control**. The **Output control** tab contains these commands:

| Icon | Name | Description |
|---|---|---|
| | **Change State (Switch On/Off)** | **Click to change the state of the output.** |
| | **Pulse** | **Click to change the state of the output only for a short moment.** |
| | **Pulse Duration** | **Drag the slider to set the duration of the pulse.** |
| | **Refresh** | **Refreshes the icon to show the status of the output.** |

**To show the Properties window, do one of the following:**

- Make sure that the digital output view is shown in the work space and then click the **Show/Hide Properties** button on the toolbar.
- Right-click on the digital output view and choose one of the tabs of the Properties window (**Description** or **Device Information**).

# Digital inputs

External devices, for example, door or window sensors, can be connected to the digital inputs of the recorder. The state of the inputs are shown with icons in Workstation. There are two states: inactive and active. The icons are selected by the system administrator.

These sections show how to monitor digital inputs:


- "Digital input icons" on page 49
- "Digital input view" on page 49
- "Digital input menu" on page 50
- "Digital input properties" on page 50

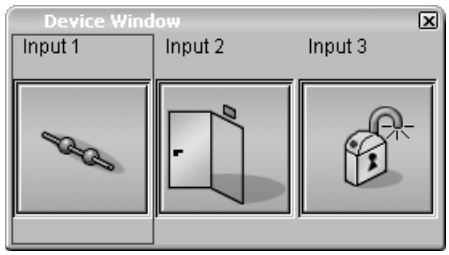

## Digital input icons

These icons identify digital inputs on the Navigator and on maps:

*Digital input icons.*

## Digital input view

The digital input view shows the state of a digital input, inactive or active.




**To show the digital input view, do one of the following:**

- Drag the digital input from the Navigator to the work space.
- Right-click a digital input on the Navigator or on a map and then choose **Show View**.

- Select the digital input, click the **Show Menu** button at the bottom of the Navigator, and choose **Show View**.

**To refresh the digital input icon:**

- Click the icon.

## Digital input menu

The menu contains these commands:

**Description:** Shows the **Description** tab of the Properties window.

**Displayed Device Information**: Shows the **Displayed Device Information** tab of the Properties window, where you can select what data are shown in the digital output view.

**To show the digital input menu, do one of the following:**

- Right-click a digital input on the Navigator or on a map.
- Right-click on the digital input view.

## Digital input properties

Digital inputs have these tabs in the Properties window:

**Description**

The description tab contains a general description of the digital input and an administrative description, which is shown only to system administrators. Only system administrators can add descriptions in System Manager.

**Displayed Device Information**

From this tab, you can select what data are shown in the view.

**Name**. The name of the input is shown.

**Device group**. The name of the device group is shown.

**To show the Properties window, do one of the following:**

- Make sure that the digital input view is shown in the work space and then click the **Show/Hide Properties** button on the toolbar.
- Right-click on the digital input view and choose one of the tabs of the Properties window (**Description** or **Device Information**).

# Audio communication

Each recorder has one audio communication channel. Through this channel, you can speak with people over a network. These sections show how to use the audio communication channel:


- "Audio communication icons" on page 51
- "Audio communication view" on page 51
- "Audio communication menu" on page 52
- "Audio communication properties" on page 52


## Audio communication icons

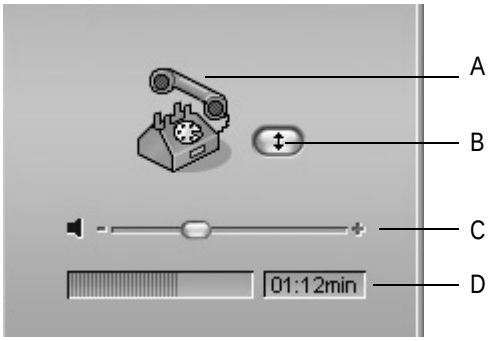
These icons are used on the Navigator or on a map to show the state of the audio communication channel:

| Icon | Description |
|---|---|
| | **The communication channel is closed.** |
| | **The call button is pressed on the other end.** |
| | **The communication channel is open.** |

## Audio communication view

When someone on the other end presses a call button, an animated telephone icon is shown on the Navigator or on a map and in the audio communication view. In addition, a buzzer rings.

The audio communication view is also automatically shown when the call button is pressed (if it is not already shown in the work space). In addition, all the device views from the same device group are also shown in the same window.




*An audio communication view A. The icon shows the state of the connection. Here the connection is open. B. Open/Close Connection button C. Volume D. The indicator shows the level of audio and the timer shows how long the connection has been open.*

**To open or close the audio connection:**

- Click the **Open/Close Connection** button in the audio communication view.

## Audio communication menu

The audio communication menu can contain these commands:

**Show View.** Shows the audio communication view.

**Connect.** Click to open the audio communication channel.

**Description:** Shows the **Description** tab of the Properties window.

**Displayed Device Information**: Shows the **Displayed Device Information** tab of the Properties window, where you can select what data are shown in the audio communication view.

**To show the audio communication menu, do one of the following:**

- Right-click the audio communication icon on the Navigator or on a map.
- Right-click on the audio communication view.

## Audio communication properties

A communication channel has these tabs in the Properties window:

**Description**

The description tab contains a general description of the channel and an administrative description, which is shown only to system administrators. System administrators can add descriptions in System Manager.

**Device Information**

From this tab, you can select if the name of the channel is shown in the view.

# Text channels

The recorders can receive text stream data from devices like cash registers or filling station pumps. You can view real-time text data in synchronization with video and audio data. In addition, you can search recorded text data using Activity Search or Text Search.

Use of text data channels requires a software license that supports text channels and also a text data capture driver. The driver specifies the data that are sent from the device to the DVMS system.

These sections show how to use text channels:

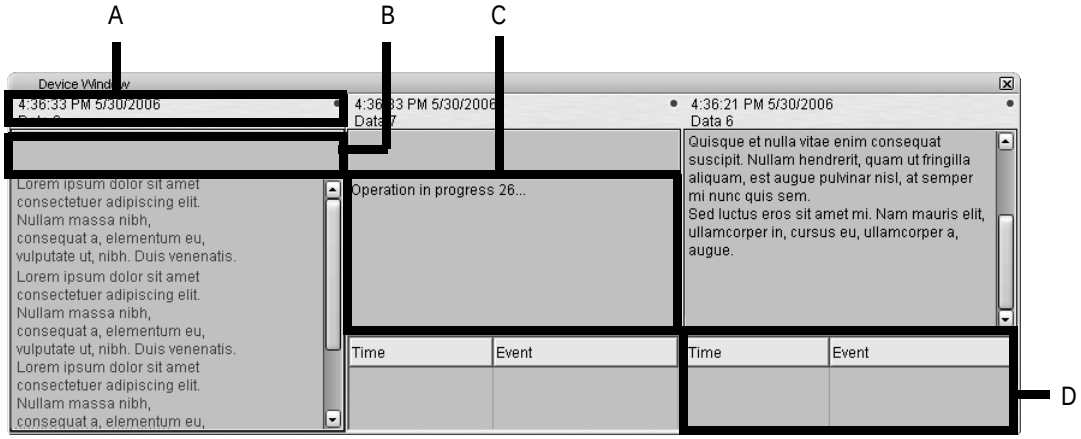

- "Text channel icons" on page 53
- "Text channel view" on page 53
- "Text channel menu" on page 54
- "Text channel properties" on page 54
- "Searching and playing back text data" on page 54


## Text channel icons

These icons identify text channels on the Navigator and on maps:

## Text channel view

The top of the text channel view shows the date and time of the selected event, the name of the channel and the site and the state of the text channel view (recording or playback). Below that are the header, the text data list, and the custom event list. The text data list is always shown. The header and the custom event list are optional.


A
B
C
D
Device Window
4:36:33 PM 5/30/2006
4:36:21 PM 5/30/2006
Data 6
Quisque et nulla vitae enim consequat suscipit. Nullam hendrerit, quam ut fringilla aliquam, est augue pulvinar nisl, at semper mi nunc quis sem.
Sed luctus eros sit amet mi. Nam mauris elit, ullamcorper in, cursus eu, ullamcorper a, augue.
Lorem ipsum dolor sit amet consectetuer adipiscing elit. Nullam massa nibh, consequat a, elementum eu, vulputate ut, nibh. Duis venenatis.
Operation in progress 26...
Time
Event
Time
Event

*Three text channel views in a device window. A. Date, time and name of the channel B. Header C. Text data list D. Custom event list.*

**Header**. The header shows identification data that are specified by the capture driver.

**Text data list**. This list shows unspecified text stream data (text events) and text that is related to custom events. The data that are shown are specified by the text data capture driver.

**Custom event list**. This list shows custom events that are specified by the text data capture driver. Custom events can optionally be shown in the text data list instead of the custom event list.

**To show a real-time text channel view, do one of the following:**

- Drag the text channel from the Navigator to the work space.
- Right-click a text channel on the Navigator or on a map and choose **Show View**.
- Select the text channel, click the **Show Menu** button at the bottom of the Navigator, and choose **Show Real-Time View**.

## Text channel menu

The text channel menu can contain these commands:

**Move Apart.** This command is shown only if there is more than one device view in a device window. It moves the selected text channel view to a device window of its own.

**Description.** Shows the **Description** tab of the Properties window, where system administrators can add information about each channel.

**Displayed Device Information**. Shows the **Displayed Device Information** tab of the Properties window, where you can select what identification data are shown at the top of the text channel view.

**Activity Search**. Shows a graphical activity search tool that you can use to find recorded text data.

**Text Search**. Shows the Text Search tool that you can use to find recorded text data.

**Show Real-Time View.** Shows a real-time text channel view.

**Show Playback View**. Shows a playback view from the channel.

**To show the text channel menu, do one of the following:**

- Right-click the text channel icon on the Navigator or on a map.
- Right-click on the text channel view.

## Text channel properties

A text channel has these tabs in the Properties window:

**Description**

The description tab contains a general description of the channel and an administrative description, which is shown only to system administrators. System administrators can add descriptions in System Manager.

**Displayed Device Information**

From this tab, you can select what data are shown in the text channel view (the name of the channel, the name of the group, the status of the channel, the date, and the time).

## Searching and playing back text data

You can search and play back recorded text stream data. To find text data using a bar chart that shows the amount of recorded data, use Activity Search. For more information, see “Activity search” on page 59. You can also find text data by specifying certain search criteria, for example, the exact text string to search for. For more information, see “Text Search” on page 63

# Playback

These sections show how to use playback:


- "Showing the playback view" on page 55
- "Multiview playback" on page 55
- "Playback controls" on page 56
- "Video and audio authentication" on page 56


For information about how to examine recorded events, see "Searching for recorded data" on page 57.

## Showing the playback view

**To show the playback view, do one of the following:**

- Right-click a camera or audio channel on the Navigator or on a map and choose **Show Playback View**.
- Select a camera or audio channel from the Navigator, click the **Show Menu** button at the bottom of the Navigator, and choose **Show Playback View** from the menu.
- Right-click on a real-time video view and choose **Show Playback View**.

**NOTE:** *If the system administrator has set playback as the primary action for a camera, you can also play back files by double-clicking the camera icon or by dragging the camera to the work space. Usually, however, double-clicking will show the real-time view.*

## Multiview playback

You can play back synchronized data from as many as eight channels. The channels can be video, audio, or text channels or a combination of them. For more information about using the device window, see "Device windows" on page 21.

*Multiview playback*

**To play back video from multiple channels, do one of the following:**

- Right-click on a device group icon on the Navigator or on a map and choose **Show Playback View.**
- Right-click on a camera on the Navigator or on a map or right-click on a real-time video view and choose **Show Playback View.** Then drag other cameras to the playback view from the Navigator or from the work space.

## Playback controls

The playback controls are shown at the bottom of the playback window. Use the controls for playing, pausing, rewinding, and fast-forwarding recorded data. Five speeds are available (1×, 2×, 4×, 8×, 16×).

*Playback window A. Click the* **Export** *button to save an image or a media clips. You can also print images. B. Shows the previous image. C. Shows the next image. D. Starts or pauses play. E. The playback slider changes playback direction or speed.* **F**. *Click* **Search** *to access one of the search tools that you can use to find recorded data.*

**To play forward:**

- Click **Play**.

**To pause play:**

- Re-click the **Play** button.

**To play fast forward:**

- Drag the slider to the right. The more you drag the slider to the right, the faster data is played back. The speed is shown in the small box next to the slider.

**To play in reverse:**

- Drag the slider to the left. The more you drag the slider to the left, the faster the data is played back. The speed is shown in the small box next to the slider.

**To move to the next or previous image:**

Click the **Next** or **Previous** button.

**NOTE:** *When MPEG-4 or WMC9 compression is used, clicking the Previous button shows the previous intraframe.*

## Video and audio authentication

The system discovers if images or audio samples are inserted, deleted, replaced, or manipulated. When manipulated video or audio files are played back, the message **The data is not authentic** is shown in red on the video or audio view.

# Searching for recorded data

These sections show how to find recorded data:


- "Motion Search" on page 57
- "Activity search" on page 59
- "Time Search" on page 62
- "Text Search" on page 63
- "Bookmarks" on page 65


## Motion Search

Use Motion Search to find images with movement in a specified area of the camera scene.

**To show Motion Search, do one of the following in playback mode:**

- Click the **Search** button and choose **Motion Search**.
- Right-click the video view in playback mode and choose **Motion Search.**

**To close Motion Search, do one of the following:**

- Click the **Close** button in the upper right corner of the Motion Search window.

### Using Motion Search

**To use Motion Search:**

1. In the Motion Search window, paint the area of interest by using the pen tool or the other drawing tools. The selected area is shown in red. See "Drawing tools" on page 58.
2. Set the sensitivity of the motion detection and the required *quantity of motion*. See "Sensitivity" on page 58 and "Quantity" on page 58.
3. Set the start and end time of the search. See "Start and end time" on page 59.
4. Set other search options. See "Other search options" on page 59.
5. Click the **Search** button. A progress bar is shown together with the **Bookmarks** list. Images that are in line with the search conditions are added to the list. For more information about Bookmarks, see "Bookmarks" on page 65.
6. You can stop the search by clicking the **Stop Search** button in the progress bar. Otherwise, the system searches to the end of the recordings or to the specified end point.
7. The search results are listed in the **Bookmarks** list. To play back an event, select the bookmark from the list and click the **Go to Bookmark** button. Then use the playback controls below the video view to play back video.

### Drawing tools

**To use the drawing tools:**

Use the drawing tools to select the target area in the video view. The system searches for movement in the areas that have been painted red and ignores movement in areas that have not been painted.

| Tool | Name | Description |
|---|---|---|
| | **Pencil** | **Use to paint the area that you want to examine. Set the pencil size by clicking one of the tool size buttons (large, medium, small).** |
| | **Eraser** | **Use to erase selected areas that you do not want to examine. Set the eraser size by clicking one of the tool size buttons (big, medium, small).** |
| | **Lasso** | **Use to select areas using straight lines. If the pen tool is selected, using this tool adds to the selected areas. If the eraser tool is selected, this tool removes from the selection. Click the image where you want to start the selection. Click again where you want to anchor the line and change direction. To complete the selection, click the starting point. The area is selected or cleared.** |
| | **Fill/Clear** | **If the pen tool is selected, clicking this button selects all of the image. If the eraser tool is selected, clicking this button removes all selections.** |
| | **Invert** | **Reverses selected and unselected areas. Sometimes it is easier to select the area that you do not want to examine and then invert the selection.** |
| | **Tool Size** | **Click one of the buttons to set the size of the pencil or eraser (big, medium, small).** |

### Sensitivity

Use the **Sensitivity** value to adjust how much the pixel values must change in order for the system to interpret the change as movement.

**To set the sensitivity:**

- Drag the slider to the left to decrease sensitivity or to the right to increase sensitivity.

### Quantity

The system finds images where the moving object is larger than the minimum size and ignores smaller objects. However, if there is more than one moving object, the system treats them as one.

For an example of how to use this setting, see “quantity of motion” on page 93.

**To set the required quantity of movement:**

- Drag the slider to the left to decrease required quantity of movement and to the right to increase required quantity.

### Start and end time

By default, Motion Search starts from the time that is shown in the playback view. It stops at the end of the recorded images. You can, however, change the start and end time.

**To set the start time:**

- On the **Date and Time** tab below the sliders, do one of the following:

  - To start the search from the oldest files, select **Search from the start**.
  - To select the start date and time, clear the check box **Search from the start**, click the **Set Start Time** button , and then select the start date and time.

**To set the end time:**

1 On the **Date and Time** tab, do one of the following:

  - To end the search to the oldest files, select **Search to the end**.
  - To select the end date and time, clear the check box **Search to the end**, click the **Set End Time** button , and then select the end date and time.

### Other search options

**To set other search options:**

1 Click the **Search Options** tab.

2 Select or clear these options:

  - **Show found images in the playback window.** When selected, each image that is found is shown in the playback window during the search.
  - **Stop the search when the first image is found.** When selected, the search stops when the first image is found.
  - **Delete unsaved bookmarks before starting a new search.** When selected, unsaved bookmarks are deleted from the bookmarks list before each search.

## Activity search

Use Activity Search to quickly find recorded data

**To show Activity Search, do one of the following in playback mode:**

- Click the **Search** button and choose **Activity Search**.
- Right-click on a video or audio view and choose **Activity Search**.

**To close Activity Search, do one of the following:**

- Click the **Close** button in the upper right corner of the Activity Search window.

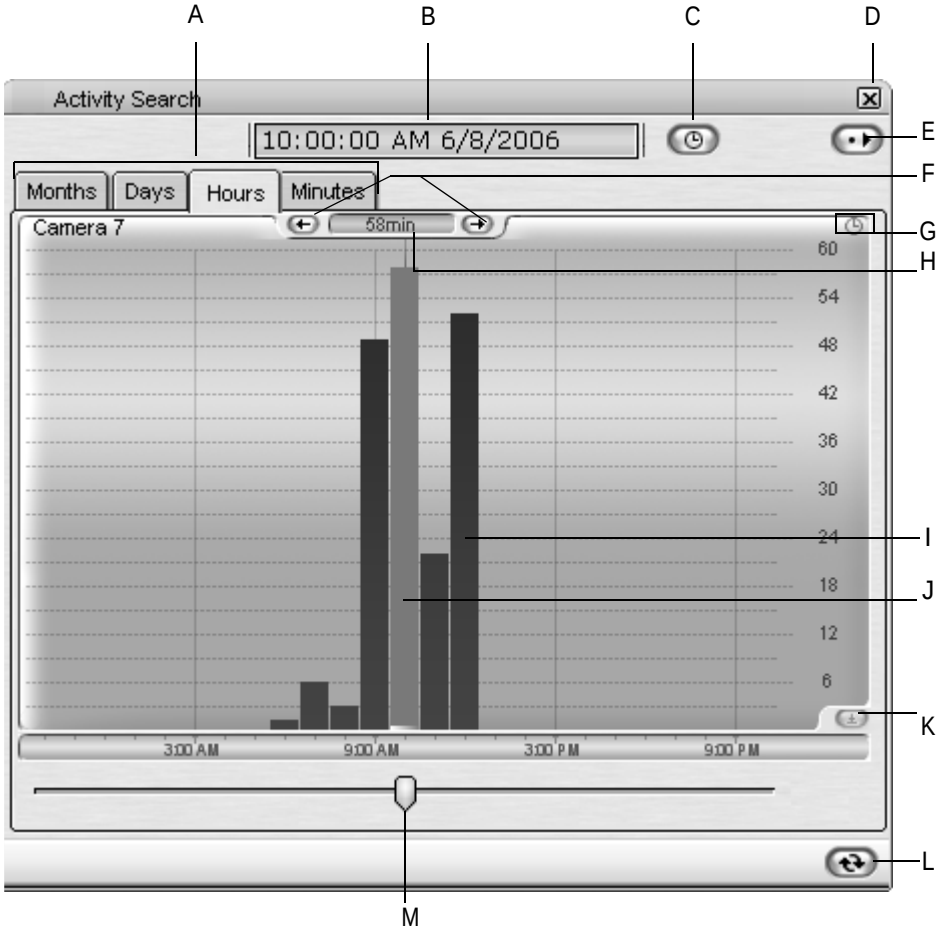
These sections show how to use Activity Search:


- "About Activity Search" on page 60
- "Moving in the graph" on page 61
- "Using Activity Search" on page 62

## About Activity Search

The Activity Search window shows recorded data as a bar graph. The horizontal axis shows the time, and the vertical axis shows the quantity of recorded data. By looking at the height of the bars, you can immediately see if there has been activity in the scene. This requires that recording is based on motion detection or audio detection.

If video or audio is recorded continuously, the bars are all of the same height. To find events from continuous recordings, try using Motion Search. For more information, see “Motion Search” on page 57.




*The graph in Activity Search*

**A. Time tabs.** Change the time scale by clicking these tabs.

**B. Date and time display**. Shows the date and time for the active time point. The recording from that time is shown in the video or audio view.

**C. Time Search button.** Shows a calendar, where you can select the date and time that you want to show in the graph. For more information about Time Search, see “Time Search” on page 62.

**D. Close**. Closes Activity Search.

**E. Options.** Shows a menu with these options:

- **Time Mode**. When time mode is selected, the quantity of recorded data is shown in time units, for example, as 60 seconds of recorded data in the selected minute. When time mode is not selected, the quantity of recorded

video is shown as the number of images. The quantity of audio is shown as the number of audio samples. The quantity of text data is shown as the number of text events.

- **Detail View** > **Show Detail**. Select **Show Detail** to show a smaller graph below the primary graph. The smaller graph shows a smaller time scale view of the selected time. For example, if the **Hours** tab is selected, the detail view shows the recorded material for each second of the selected minute.
- **Scale**. If the scale of the graph is not appropriate for the quantity of the recorded data, you can change the scale here. The option is available only in data mode.

**F. Previous Bar** and **Next Bar** buttons. By clicking these buttons, you can move to the subsequent or previous bar.

**G. Time mode symbol.** The clock symbol in the upper right corner shows that the graphs is in time mode. If no symbol is shown, the graph is in data mode.

**H. Quantity display.** In time mode, this display shows how many time units of recorded video or audio the selected bar contains. In data mode, it shows the number of images or audio samples.

**I. Bars.** Each bar shows the quantity of recorded data during the selected time unit. When you point on the graph with the mouse, the start time of the bar is shown in a ToolTip. Click on a bar to see the corresponding video or text data or to listen to the corresponding audio. **NOTE:** *Click the Play button below the view to start playback.*

**J. Selected bar.** The selected bar is shown in a different color, and data from that time is shown in the playback window. When video or audio is played back, an indicator moves along the bars to show the active time point.

**K. Fit Graph to Window.** If the bars do not fit in the screen, an arrow at the top of a bar shows that there is more. To change the scale, click the **Fit Graph to Window** button. The command is available only in data mode. Alternatively, click **Options**, point to **Scale**, and then choose the scale.

**L. Refresh**. The graph is not automatically updated to show video or audio that is recorded after Activity Search was opened. Click this button to update the graph.

**M. Scroll box.** By dragging the scroll box, you can quickly move forward or backward in the recordings. While you drag, a ToolTip shows the date and time you are at to let you know when to release the scroll box.

## Moving in the graph

You can navigate the graph as follows:

- **Time tabs.** Click the time tabs to navigate in the recordings.
- **Forward and backward buttons**. To move forward and backward one bar at a time, click the **Next Bar** and **Previous Bar** buttons.
- **Select a bar.** Click a bar to see the first image of the bar. The selected bar is always moved to the center of the graph.
- **Scroll bar.** Click and drag the scroll box to move forward or backward in the material.
- **Time Search**. Click the **Time Search** button to show a calendar, where you can select the date and time that you want to move to.

## Using Activity Search

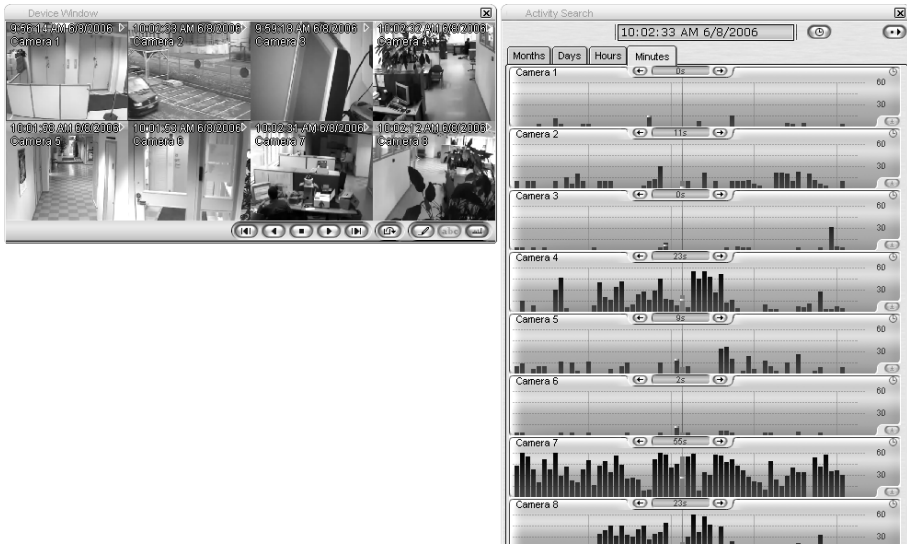
**To use Activity Search:**

1. Click the **Months** tab and then click the month (vertical bar) that you want to examine. Then click the **Days** tab to choose the day, and then the **Hours** and **Minutes** tabs (if necessary) to select the hour and the minute.
2. The selected bar is shown in yellow, and the first image of the bar is shown in the video view.
3. To play back video or audio, use the playback controls in the Device Window. For more information, see "Playback controls" on page 56.

**NOTE:** *To find the right image, you can move from image to image using the* **Previous** *and* **Next** *buttons.*

## Multiview search

You can have as many as eight video or audio views open in Activity Search at the same time.




*Multiview search.*

**To add a camera, audio channel, or text channel to the search window:**

- Drag the camera or audio channel from the Navigator to the search window.

**To remove a camera, audio channel, text channel from the search window:**

- Drag the view away from the search window or right-click on the view and choose **Close**.

# Time Search

Use Time Search to find the nearest recorded image from the specified time point.

**To use Time Search:**

1. In Activity Search, click the **Time Search** button. Time Search is shown.
2. Select the year and month from the menus. Then select the date from the calendar by clicking on a date. Select the time from the menus.
3. Click **OK**. The program finds the nearest recorded image from the selected time forward or back. The image is shown in the video view, and the graph is also updated.

See also “Activity search” on page 59.

# Text Search

Use Text Search to find recorded text data (see “Text channels” on page 53).

These sections show how to use Text Search:


- “About text search” on page 63
- “Using text search” on page 64


## About text search

Text Search has these options:

**Event type**

Always select at least one event type. The option **Text event** is the only fixed option. You can use this option to find text strings from unspecified text stream data. The other options are custom event types that are specified by the data capture driver.

**Text criteria**

The data capture driver can specify search tags for each event type, and you can use these tags to find events. For example, if the total sum of a purchase is used as a search tag, you can find events where the total sum falls within the specified range.

There are two types of search tags: text tags and numerical tags. When using text tags, specify the exact alphanumeric string to find. When using numerical tags, you can either specify the exact value to find or a range of values. Use only integers as search criteria.

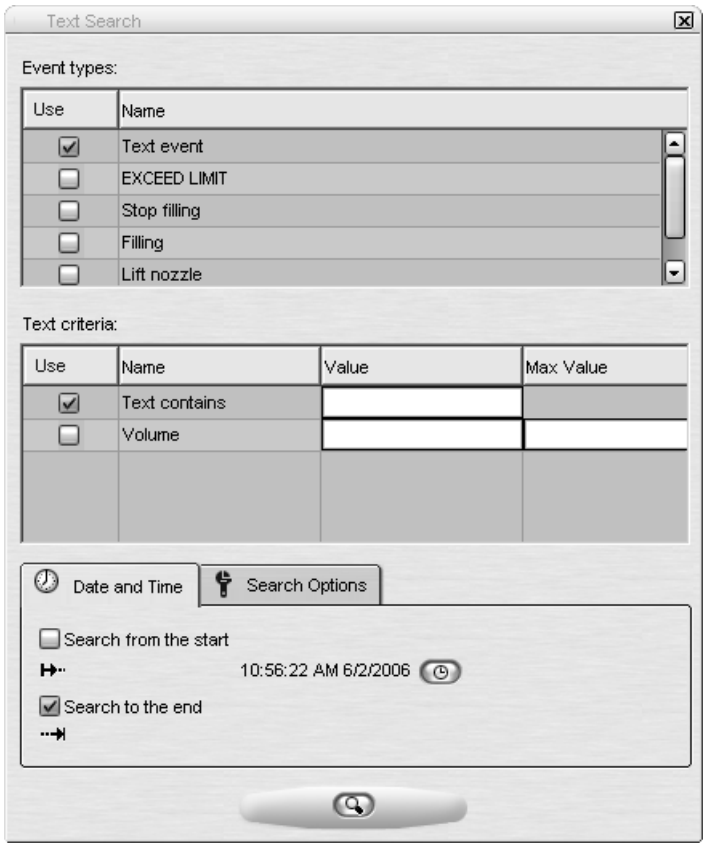
The only fixed search option is **Text contains**, which finds text strings from unspecified text stream data (text events) that are shown in the text data list.

**Boolean search logic**

If you select more than one event type, the program finds events that belong to any one of the selected event types (Boolean OR).

If you select more than one text criterion, the program finds events that contain all of the specified criteria (Boolean AND).

If you specify more than one event type and more than one text criterion, the program finds those events that belong to one of the selected event types and that contain all of the specified attributes (Boolean AND).




*The search logic used in Text Search. The search finds events that belong to one of the selected event types and that match all of the specified text criteria.*

## Using text search

**To find events that contain text strings:**

1. Under **Event types**, select one of the following:
   - Select **Text event** to find the string from unspecified text stream data.
   - Select a custom event type that is related to text strings.
2. Under **Text criteria**, select **Text contains** or another criterion that accepts text strings.
3. Double-click the applicable cell in the **Value** column and type the text to search for.
4. Set the start and end date and time and specify other search options.
5. Click **Search**.

**To find events that contain numbers:**

1. Under **Event types**, select an event type that is related to numbers.
2. Under **Text criteria**, select a search option that accepts numerical values.
3. Do one of the following:
   - To specify the exact value to find, double-click the **Value** column and type the number to find.

- To specify a range of values, type the lowest value in the **Value** column and the highest value in **Max Value** column.
  **NOTE**: *Use only integers.*

4 Set the start and end date and time and specify other search options.

5 Click **Search**.

**To find custom events:**

1 Under **Event type**, select the event type.

2 If necessary, specify other search criteria under **Text criteria**.

3 Set the start and end date and time and specify other search options.

4 Click **Search**.

**To set the start time:**

- To start the search from the oldest files, select **Search from the start**.
- To select the start date and time, clear the check box **Search from the start**, click the **Set Start Time** button , and then select the start date and time.

**To set the end time:**

- To end the search to the oldest files, select **Search to the end**.
- To select the end date and time, clear the check box **Search to the end**, click the **Set End Time** button , and then select the end date and time.

**To set other search options:**

- **Show found text data in the playback window.** When selected, the playback window shows all matches during the search.
- **Stop when the first match is found.** When selected, the search stops when the first match is found.
- **Delete unsaved bookmarks before starting a new search.** When selected, unsaved bookmarks are deleted from the bookmarks list before each search.

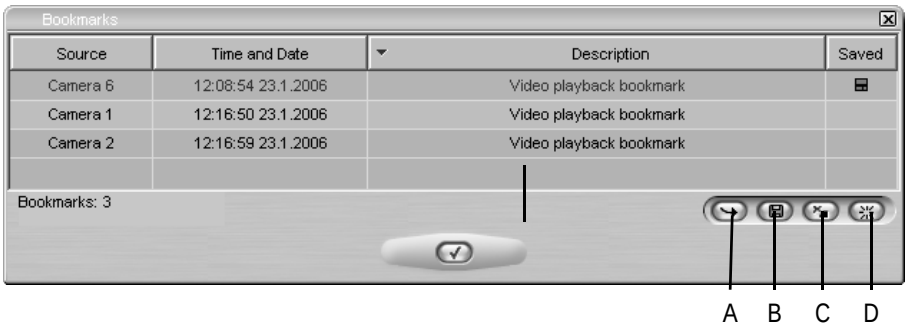
The found events are added to the Bookmarks list. For more information, see “Bookmarks” on page 65.

## Bookmarks

When you use Motion Search or Text Search, the program adds found events to the Bookmarks list. In addition, you can manually add images or audio samples to the list for easy retrieval.

The list can contain saved and unsaved bookmarks. When bookmarks are added to the list they are unsaved. Unsaved bookmarks are deleted if you switch profiles or log off from Workstation.

To keep a bookmark in the list even if you switch profiles or log off, you must save it. Saved bookmarks are kept in the list until you manually remove them.




*Bookmarks list. A. Shows the bookmarked image or audio sample B. Saves the bookmark C. Deletes the selected bookmark or bookmarks D. Deletes all unsaved bookmarks*

The list contains these columns:

**Source**. The name of the camera or audio channel.

**Date and Time**. The start date and time of the event.

**Description**. The name of the event or the description typed when the bookmark was saved manually.

**To play back an event from the Bookmarks list, do one of the following:**

- Double-click the event.
- Click the event that you want to play back and click the **Go to Bookmark** button.
- Right-click the event and choose **Go to Bookmark**.

Playback starts automatically.

**To bookmark an event:**

- Right-click on a video view in playback mode and choose **Add to Bookmarks**.

**To save a bookmark:**

1. Click the bookmark that you want to save and do one of the following:
   - Click the **Save Bookmark** button.
   - Right-click the event and choose **Save Bookmark**.
2. Type a description of the bookmark and click **OK**.

# Image tools

The program has a number of image tools that you can use to enhance details and make images clearer. You can use the image tools on real-time and recorded video.

**To use the image tools:**

1. Right-click on the video view that you want to enhance and choose **Image Tools**.
2. Click the filter or filters you want to apply. The modified image is shown in the **Image Tools** window.
3. Click **OK**. If you applied the filters to real-time video, the filters will be used in real-time mode, but playback video is not affected. If you applied the filters to playback video, only playback video is affected. The filters will be used until you change or reset them.

**To reset the filters:**

1. Right-click on the video view and choose **Image Tools**.
2. Click **Reset**.

These tools are available:

**Sharpen**

Increases the contrast near edges.

**Reduce noise**

Noise refers to random pixels that make an image look grainy. This filter removes unwanted pixels and makes the image smooth without blurring edge details.

**Find edges**

This filter enhances the edges of objects, so that objects become clearer.

**Grayscale**

Removes color from an image.

**Equalize**

This filter distributes the lightness values more evenly across the light spectrum from black to white. It makes the darkest pixel as close to black and the lightest pixel as close to white as possible. It then distributes the remaining pixels evenly between these two values.

**Deinterlace**

A 4CIF frame contains two interlaced fields, which can cause a comb effect in fast moving objects. This filter removes the comb effect.

**Mirror**

Reverses an image along its horizontal axis.

**Flip**

Reverses an image along its vertical axis.

**Zoom**

1. Click the **Zoom** button. A rectangle is shown in the video view.
2. Click the rectangle, keep the mouse button pressed, and move the rectangle over the area that you want to magnify.
3. Release the mouse button when the rectangle is in the right position. The magnified area is shown in the Modify Image window.
4. To magnify a different area, click somewhere else in the image or drag the mouse in the image to move the magnified area.
5. Click OK. The magnified area is shown in the video view.

**NOTE:** *You can resize the rectangle to adjust the dimensions of the zoomed area. The smaller the area, the more it is magnified.*

**Brightness**

Move the **Brightness** slider to the left to darken the image and to the right to lighten the image.

**Contrast**

Adjusts the difference between light and dark areas in the image. Move the **Contrast** slider to the left to decrease the contrast and to the right to increase the contrast.

# Exporting video, audio, text and alarm data

These sections show how to print or save video, audio and text data:


- "Printing or saving individual images" on page 69
- "Exporting video, audio and text data clips" on page 71
- "Exporting alarm specific media clips" on page 72
- "Playing video, audio and text data clips" on page 73
- "Printing text data" on page 75


## Printing or saving individual images

You can print out individual images or save them on a disk. The date and time of the image and the name of the camera is shown on the print. If you save an image on a disk, the system also saves an HTML file that contains information such as the date and time of the image.

| General Information | |
|---|---|
| File Name | Camera 2 |
| Description | Saved image |
| File Size | 490,8 KB |
| **Source Information** | |
| Source name | Camera 2 |
| Date and Time | 25.9.2006 17:52:09 |
| Source description | |
| **Export Information** | |
| User | Admin |
| Date and Time | 25.9.2006 17:54:42 |

*Image information shown on an HTML page.*

**To print an image in playback mode:**

1. Find the image that you want to print. For more information, see "Searching for recorded data" on page 57.
2. Click the **Export** button in the playback panel and choose **Print Image**. The image is sent to the default printer. The message **The image was printed successfully** is shown when the image has been printed.

**To print an image in real-time mode:**

1. Right-click on the video view and choose **Capture**. The captured image is shown in the small window on the **Clipboard**.
2. Click **Print**. The image is sent to the default printer. The message **The image was printed successfully** is shown when the image has been printed.

**NOTE***: You can also right-click a video view and choose Print Image.*

**To export an image in playback mode:**

1. Find the image that you want to export. For more information, see "Searching for recorded data" on page 57.
2. Click the **Export** button in the playback panel and choose **Save Image**. The **Save Image** dialog box is shown.
3. First select the target disk and then the target folder. To create a new folder in a currently open folder, click the **New Folder** button. To move up to a higher level folder, click the **Up** button. To save the clip on CD-R/RW or DVD-R/RW, select **CD/DVD Drive**.
4. If you are saving the file to a CD/DVD disc:
   - **f** Mark **Format the CD/DVD before writing files on it** if you want to format the disc.
   - **g** Mark **Allow clips to be added later (Multisession disc)** if you want to allow files to be added to the disc at a later time.
5. Type a name for the image, choose the image format, and then click **OK**.
   These formats are available: BMP, GIF, TIFF, JPEG, and PNG.
   If you are not sure which format to use, choose JPEG or PNG. A JPEG file requires less space and is usually of adequate quality. A PNG file is larger but of better quality. Both file formats can be shown by most web browsers.

**To export an image in real-time mode:**

1. When the image that you want to export is shown in the video view, right-click on the video view and choose **Capture**. The captured image is shown in the small window on the **Clipboard**.
2. Click **Save**. The **Save Image** dialog box is shown.
3. First select the target disk and then the target folder. To create a new folder in a currently open folder, click the **New Folder** button. To move up to a higher level folder, click the **Up** button.
4. If you are saving the file to a CD/DVD disc:
   - **h** Mark **Format the CD/DVD before writing files on it** if you want to format the disc.
   - **i** Mark **Allow files to be added later (Multisession disc)** if you want to allow files to be added to the disc at a later time.
5. Type a name for the image, choose the image format, and then click **OK**.
   These formats are available: BMP, GIF, TIFF, JPEG, and PNG.
   If you are not sure which format to use, choose JPEG or PNG. A JPEG file requires less space and is usually of adequate quality. A PNG file is larger but of better quality. Both file formats can be shown by most web browsers.

**NOTE:** *If the image is not the one that you wanted or if you want to capture one more image after printing or exporting one, click the Capture button on the Clipboard tab.*

*You can also save images by right-clicking a video view and choosing* **Save Image***.*

# Exporting video, audio and text data clips

You can export a media clip containing data from one or more cameras, audio channels or text data devices.

You can have the system automatically export media clips with default settings or have the program show a dialog box in which you can change the settings before a clip is exported. For information on using default or manual settings and on editing the default settings, please see "Setting default export settings" on page 73.

You can save clips on CD-R, CD-RW, DVD-R, DVD-RW, removable devices and the local hard disk. Clips can be played back using the Mirasys Media Player program, which is automatically saved with clips, or Windows Media Player. For more information, see "Playing video, audio and text data clips" on page 73.

**To export a media clip:**

1. To save on a CD or DVD, put the CD or DVD into the CD/DVD-RW drive. To save on a removable device, plug the device in.
   **NOTE**: *If the Windows dialog box Blank disk is shown, select No action. The recorder will write the clip to the disc automatically.*
2. Open a playback view from the cameras, audio channels and text data channels that you want to export a clip from. If you want to export a synchronized clip from more than one channel, the playback views must be in the same device window.
3. Use Motion Search or Activity Search to find the image that you want to start the media clip from. For more information, see "Searching for recorded data" on page 57.
4. Click the **Export** button in the playback panel and choose **Save Clip**.
5. If default media clip export settings are not used (please see "Setting default export settings" on page 73 for further information), the **Media Clip Settings** dialog box is shown. Do the following and then click **OK**:
   - Select where you want to save the clip. To save the clip on the local hard disk, select My documents\Clips. To save the clip on CD-R/RW or DVD-R/RW, select **CD/DVD Drive**. To save on a removable device, select **Removable drive**.
   - In **File Name**, type a file name for the clip.
   - You can set the maximum video size from the **Max. video size** drop-down menu.
   - In **Start**, select the start time of the clip by clicking the button.
   - In **End**, select the end time of the clip by clicking the button.
   - Use the duration slider to define the length of the media clip.
   - If you are saving the file to a CD or DVD, mark **Format the CD/DVD before writing files on it** if you want to format the disc before saving the clip.
   - If you want to use the same CD/DVD disc to save media clips at a later time, mark the **Allow files to be added later (multisession disc)** checkbox.

## Exporting alarm specific media clips

If an alarm activates pre- or post-alarm recording for one or more devices, the alarm specific recordings can be exported through the **Alarms** window (please see "Alarms window" on page 78 for information on accessing the **Alarms** window).

If you have applied default settings for exporting media clips, the settings are also used when exporting alarm specific media clips.For information on using default or manual settings and on editing the default settings, please see "Setting default export settings" on page 73.

You can save alarm specific media clips on CD-R, CD-RW, DVD-R, DVD-RW, removable devices and the local hard disk. Clips can be played back using the Mirasys Media Player program, which is automatically saved with clips, or Windows Media Player. For more information, see "Playing video, audio and text data clips" on page 73.

**To export an alarm specific media clip:**

1. To save on a CD or DVD, put the CD or DVD into the CD/DVD-RW drive. To save on a removable device, plug the device in.
   **NOTE**: *If the Windows dialog box Blank disk is shown, select No action. The recorder will write the clip to the disc automatically.*
2. Open the **Alarms** window (please see "Alarms window" on page 78 for information on accessing the **Alarms** window).
3. Find the alarm from which you want to export data in the **New** or **Search** tabs (please see "Alarms window" on page 78 for further information on finding alarms in the **New** or **Search** tabs).
4. Click the **Export Alarm** button in the lower right corner of the **Alarms** window.
5. If default media clip export settings are not used (please see "Setting default export settings" on page 73 for further information), the **Media Clip Settings** dialog box is shown. Do the following and then click **OK**:
   - Select where you want to save the clip. To save the clip on the local hard disk, select My documents\Clips. To save the clip on CD-R/RW or DVD-R/RW, select **CD/DVD Drive**. To save on a removable device, select **Removable drive**.
   - In **File Name**, type a file name for the clip.
   - You can set the maximum video size from the **Max. video size** drop-down menu.
   - In **Start**, select the start time of the clip by clicking the button.
   - In **End**, select the end time of the clip by clicking the button.
   - Use the duration slider to define the length of the media clip.
   - If you are saving the file to a CD or DVD, mark **Format the CD/DVD before writing files on it** if you want to format the disc before saving the clip.
   - If you want to use the same CD/DVD disc to save media clips at a later time, mark the **Allow files to be added later (multisession disc)** checkbox.

## Setting default export settings

**To change media clip settings:**

1. On the menu bar, click **User** and choose **Media Clip Settings**.
2. Do the following:
   - Select where you want to save clips. To save clips on the local hard disk, select My documents\Clips. To save clips on CD-R/RW or DVD-R/RW, select **CD/DVD Drive**. To save on a removable device, select **Removable drive**.
   - In **File Name**, type a file name for clips.
   - You can set the maximum video size from the **Max. video size** drop-down menu.
   - Use the duration slider to define the default length of the media clip.
   - If you are saving the media clip to a CD or DVD, mark the **Format the CD/DVD before writing files on it** checkbox if you want to format the disc before saving the clip.
   - If you want to use the same CD/DVD disc to save media clips at a later time, mark the **Allow files to be added later (multisession disc)** checkbox.
   - Select or clear the check box **Don't show this dialog again.**

## Playing video, audio and text data clips

Video, audio and text data clips are exported as Windows Media files (WMV). They can be played using Mirasys Media Player or Windows Media Player.

These sections show how to use the two players:


- "Using Mirasys Media Player" on page 73
- "Using Windows Media Player" on page 74


### Using Mirasys Media Player

You can use Mirasys Media Player to play video, audio and text data clips (media clips) that have been exported from Mirasys Workstation. In addition, the player verifies the authenticity of the media clips. If images, audio samples or text data are manipulated, the player shows that the clip is not authentic.

The player is automatically exported with media clips and saved to the same folder as the clip.

#### System requirements

Mirasys Media Player requires the following system configuration:

- Windows XP operating system
- Microsoft DirectX 9.0c or later
- Microsoft .NET Framework 1.1
- Microsoft DirectX for Managed Code
- 16- or 32-bit colors

- Sound card for playing audio

*A synchronized media clip from five cameras and one audio channel. A. Click* **File** *and then* **Open** *to play a different media clip B. Volume C. Information about an audio channel D. Mute E. Playback buttons F. The green circle and the text* **Authentic** *show that this clip is authentic.*

*A red light and the text* **Not authentic** *show that this clip is not authentic.*

**To play a media clip from a CD or DVD:**

- Put the CD or DVD into the CD/DVD drive. The player starts automatically and starts to play the clip.

**To start Mirasys Media Player from the hard disk or CD:**

- Double-click the file MediaPlayer.exe.

**To play a media clip from the hard disk:**

- On the menu bar of the Mirasys Media Player, click **File** and then **Open**. Select the WMV file that you want to play back and click **Open**. The media clip starts to play.

## Using Windows Media Player

You can play back exported media clips using Windows Media Player.

It is important to note that if the clip contains data from multiple video or audio sources, only one of the video and audio sources is played through Windows Media Player. In addition, text data clips cannot be played through Windows Media Player. Please use Mirasys Media Player to play media clips containing multiple synchronized video and/or audio clips or any text data.

Exported clips can be played with Windows Media Player version 7 or newer.

**To play a media clip using Windows Media Player:**

- Right-click the media clip file (WMV file), choose **Open With** and then Windows Media Player. The clip starts to play automatically.

## Printing text data

You can print text data through the real-time and playback modes in Worskstation or by printing exported text data clips through Mirasys Media Player.

**To print a real-time text data clip through Workstation:**

1. Open a real-time view for the text channel you want to print data from.
2. After the data channel has opened in the workspace, right-click on the device window.
3. Select **Print Text Data**.
4. The data is sent to the default printer.

**To print a playbacked text data clip through Workstation:**

1. Open a playback view for the text channel you want to print data from.
2. After the data channel has opened in the workspace, use the Activity Search or Text Search tools or the playback slider to find the desired text segment.
3. Right-click on the device window.
4. Select **Print Text Data**.
5. The data is sent to the default printer.

**To print a text data clip using Mirasys Media Player:**

1. Open a text data clip with Mirasys Media Player as instructed in “Using Mirasys Media Player” on page 73.
2. Find the desired text segment.
3. Click **Pause** or **Stop** to freeze the playback.
4. From the **File** menu, select **Print**.
5. The data is sent to the default printer.

**NOTE:** *Whether printed through the playback or real-time views or through Mirasys Media Player, the text data is printed with its original formatting.*

# Managing alarms

These sections show how to manage alarms:


- "About alarms" on page 76
- "Alarm views" on page 76
- "Alarm settings" on page 77
- "Alarms window" on page 78


## About alarms

Different types of events can cause alarms and different actions.

For example these events can cause an alarm:

- Movement in image.
- The camera signal disappears, for example, because the camera cable is removed or cut.
- A digital input from an external device.
- The measured level of audio exceeds the audio limit high.
- The measured level of audio drops below the audio limit low.

The above events can cause for example these actions:

- Alarm video is recorded. In addition, you can have alarm video shown automatically.
- Alarm audio is recorded. In addition, you can have the alarm audio view shown on the screen automatically.
- A signal is sent to one of the digital outputs of the recorder. The output can activate an external device.
- A dome camera is moved to a preset position.
- A dome camera starts a pre-programmed camera tour.
- Alarm video is sent to a video monitor.

## Alarm views

When an alarm occurs, the device that has triggered the alarm is highlighted in the Navigator and the Map Tool. In addition, a feed from a camera or microphone can be set to automatically open in a pop-up window on the screen. These feeds are called *alarm views*.

For alarm views to be enabled, the system administrator has to have enabled pop-up windows for the user profile. Additionally, pop-up alarm windows need to be enabled through the **Alarm Settings** in the **Workstation** application. For further information, please see "Alarm settings" on page 77.

There are two types of alarm pop-up views: video views and audio views.

An *alarm video view* shows video from the alarm camera.

An *alarm audio view* shows an oscilloscope, which shows the frequencies of the audio signal in graphical form.

This figure shows a sample alarm pop-up window with two alarm views:

*Alarm window with one alarm video view and one alarm audio view. The name of the alarm and the time it was activated are shown in the title bars.*

The alarm pop-up window can contain up to 16 alarm views. If the window is full, subsequent alarms can not be shown.

The alarm pop-up window can be set to automatically close after the alarm is over. Alternatively, the alarm pop-up window can be set to be closed manually. In this case, the alarm pop-up window can be manually closed by clicking the **Close** button at the upper right corner of the pop-up view.

In some configurations, an ongoing alarm can be closed by *acknowledging* the alarm.To acknowledge an alarm, select the alarm and click the **Acknowledge** button at the lower right corner of the **New** tab in the **Alarms** window.

**To close an alarm view:**

- Click the **Close** button in the upper right corner of the view.

**To close an alarm pop-up window:**

- Click the **Close** button in the upper right corner of the pop-up window.

**To acknowledge an alarm:**

- Select the active alarm on the alarm list, and click the **Acknowledge** button at the lower right corner of the alarm list.

**To show alarm views automatically:**

- Click **User** and then **Alarm Settings**. Select **Display pop-up window when the alarm occurs.**

**To disable automatic alarm views:**

- Click **User** and then **Alarm Settings**. Clear the check-box **Show alarm view when alarm occurs.**

**To close alarm views automatically when alarms are over:**

- Click **User** and then **Alarm Settings**. Select **Close pop-up window when the alarm is over.**

## Alarm settings

In alarm settings, you can edit the alarm pop-up window and alarm list settings.

**To show alarm settings:**

- Click **User** and choose **Alarm Settings**.

**The following options can be set:**

- **Display pop-up window when the alarm occurs**. When selected, each new alarm will be shown in the alarm pop-up window.

- **Close pop-up window when the alarm is over**. When selected, the alarm pop-up window is automatically closed when the active alarms are over.
- **Show alarm list at startup**. When selected, the **Alarms** window will be shown after logon.
- **Show alarm list when alarm occurs**. When selected, the **Alarms** window will be shown when an alarm takes place.

# Alarms window

Only alarms that belong to your currently selected profile are shown in the **Alarms** window.

**To show or hide the Alarms window:**

- Click the **Show/Hide Alarm List** button on the toolbar.

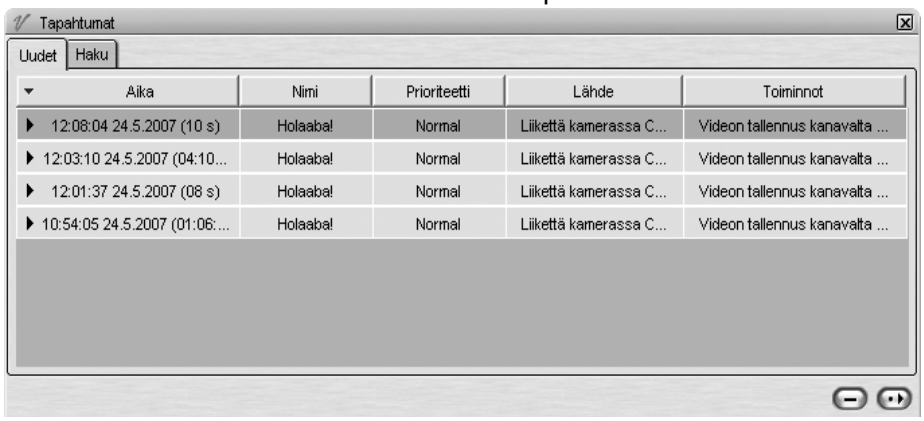
The list has two tabs:

**New**. This tab shows the 100 most recent alarms. For more information, see "New" on page 78.

**Search**. Click this tab to examine older alarms. For more information, see "Search" on page 80.

## New

The **New** tab in the **Alarms** window contains up to 100 most recent alarms.




**NOTE**: *The list is cleared automatically when you change profiles or log off Workstation.*

**The list contains these columns:**

- **Time**. The date and time of the alarm.
- **Name**. The name of the alarm.
- **Priority**. Alarms with high priority are identified with 1, medium priority with 2, and low priority with 3.
- **Trigger**. The source of the alarm. For example a camera, a digital input or an audio channel.
- **Actions**. Lists the actions performed as the result of the alarm. For example video or audio recording, camera mask change, or I/O device activation.

**Arranging alarms**

By default, the alarms are arranged according to their date and time. You can arrange the alarms according to their time, name, priority, trigger or actions by clicking on the column heading in the alarm list.

The alarms can be arranged in an ascending or descending order by re-clicking the column heading. The small arrow head on the heading shows whether the alarms are arranged in an ascending or descending order.

**To arrange alarms:**

- Click on a column heading.

### Examining alarms

**To examine an alarm:**

- Select the alarm and click on the arrow sign on the left side of the name of the alarm. The alarm details are displayed. To close the details, re-click on the arrow sign.

**To play back an alarm, do one of the following:**

- Select the alarm, click the menu button in the lower right corner of the list, and choose **Recorded Material.**
- Right-click the alarm and choose **Recorded Material**.
- Open the alarm details as instructed above. Click **Recorded Material** at the right side of a device in the alarm details.

**To show a real-time view from an alarm, do one of the following:**

- Select the alarm, click the menu button in the right corner below the list, and choose **Live.**
- Right-click the alarm and choose **Live**.
- Open the alarm details as instructed above. Click **Live** at the right side of a device in the alarm details.

### Acknowledging alarms

When you acknowledge an alarm, the alarm view is closed and alarm recording stops. However, the alarm stays on the **Recent Alarms** list. You can acknowledge only active alarms (alarms that are currently taking place).

**NOTE:** *You can acknowledge alarms only if the administrator has set the alarm as acknowledgeable and if you have been given the required user rights for acknowledging alarms.*

**To acknowledge an alarm, do one of the following:**

- Select the alarm and then click the **Acknowledge** button at the bottom of the **Alarm List**.

- Right-click the alarm and choose **Acknowledge**.

## Alarm description

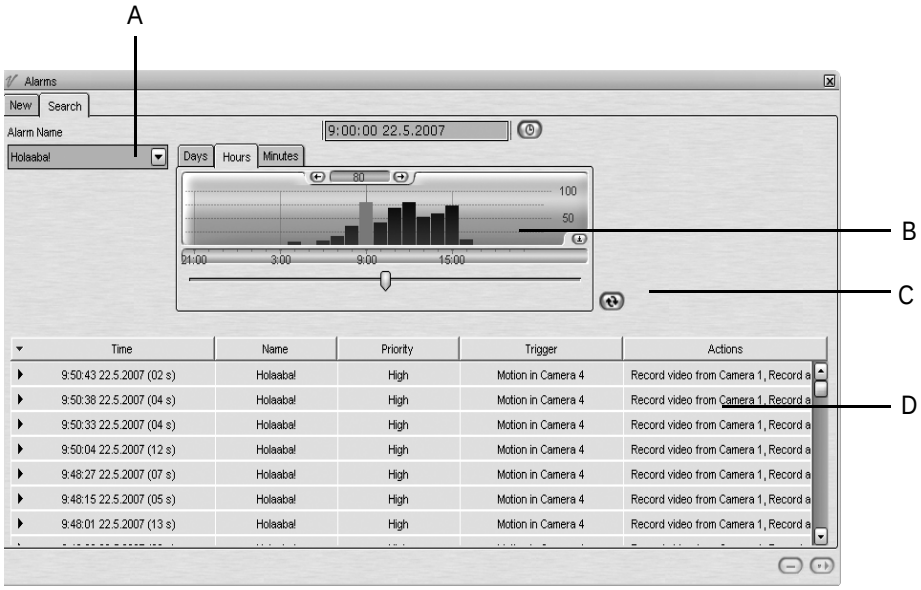
System administrators can add descriptions or procedural instructions to alarms. The descriptions are shown in the Properties window.

**To show an alarm description:**

1. Make sure that the Properties window is shown on the screen. If it is not, click the **Show/Hide Properties** button on the menu bar.
2. Click the alarm that you want to see a description of.

## Search

On the **Search** tab of the **Alarms** window, you can examine older alarms and play back alarm video and audio. You can find alarms by name and time. For example, you can retrieve alarms that have been caused by motion detection on Camera 1 during a specified time.




*Alarm Search. A. List of alarm names B. The graph shows the number of alarm events. The selected bar is shown in yellow in the graph. C. Refreshes the graph and the list to show the most recent alarms D. Alarms generated during the selected time.*

**To search alarms in the Search tab:**

1. Make sure that the correct profile is selected in the Navigator.
2. Use the drop-down list at the upper left corner of the tab to select the name of the alarm that you want to examine. The system then shows the alarm events as a graph.
3. Select the desired date and time and then click one of the bars. Alarms that are in line with the conditions are listed in the lower part of the window.
   **NOTE:** *You can also click Time Search to select the date and time.*

For information on examining the alarms in the search list, please see "Examining alarms" on page 79.

For information about how to export a video or audio clip, see "Exporting video, audio and text data clips" on page 71.

# Archives

The **Archive** functionality enables the users to create and open data archives containing recorder specific material from cameras, audio devices and other data sources.

Archive files are password protected and can only be opened on a Mirasys NVR Workstation.

Archive files are meant to be used as a convenient way of transferring large amounts of recorded data easily in situations in which exporting the data would be too slow or limiting.

It should be noted that when an archive file is opened for viewing in a Workstation, all other Workstation specific functions are disabled while viewing the archive file. This includes features such as alarms and monitoring functions. Recorder specific functions - such as recording new data - are not affected, only the functions of the specific Workstation client. All typical Workstation functions can be accessed by clicking selecting **Service** from the drop-down menu at the top side of the Navigator.

In practice, this means that archived files should be opened mainly on a Workstation client that is not used for active surveillance purposes. As archive files can be opened on any Workstation client, the files can be opened on a client not connected to the system on which they have been created.

## Creating archives

**To create an archive:**

1. On the menu bar, click **File**.
2. Click **Create Archive for Recorder** and select the recorder for which you want to create the archive file.
3. Set the password for the archive file by clicking the **Set password for the archive** button.
4. Type the password into the **New password** field.
5. Confirm the password by typing it into the **Confirm new password** field.
6. If you want to change the name of the archive, type the new name into the **Name** field.
7. Select, whether to create the archive on a local drive (on the recorder) or on a network drive by selecting **Archive to a local drive on the recorder** or **Archive to network drive**.
8. Click the **Change directory** button to set the directory in which the archive will be saved.
9. Click the **Change the start time of the archive file** button to set the start date and time for the archive.
10. Use the **Change the length of the archive** slidebar to set the duration of the archive.
11. Select the devices you want to include in the archive from the **Components to be archived** list.
12. Click **OK** to create the archive.

## Opening archives

**To open an archive:**

1. On the menu bar, click **File**.
2. Select **Open Archive**.
3. Use the data source drop-down menu and directory list to locate and select the archive file.
4. Mark the **Close previous archives** checkbox to close previously opened archive files, or leave the checkbox empty to keep previously opened archive files open.
5. The archive file is opened. You can access the devices contained in the archive file through the navigation bar. Please see "Playing back video" on page 30, "Audio playback" on page 41 and "Searching and playing back text data" on page 54 for information on accessing device specific data in the archive file.

**NOTE:** *You can switch between viewing archives and accessing the default Workstation functionalities by selecting Service (for accessing the recorder functionalities) or Backups (for viewing archive files) from the drop-down menu at the top side of the Navigator.*

## Closing or deleting archives

**To close an archive:**

1. In the Navigator, right-click on the name of the archive file.
2. Select **Close archive** to close the archive file.

**To delete an archive:**

1. In the Navigator, right-click on the name of the archive file.
2. Select **Delete archive** to delete the archive file.
3. Click **OK** to confirm deleting the archive.

# Configuring external devices

External devices - such as joystick controllers for dome cameras - can be configured through Workstation.

**NOTE:** The driver for the external device has to be installed in the system.

**To configure an external device:**

1. On the menu bar, click **File**.
2. Select **Configure External Device**.
3. Select the device you want to configure from the **Model** drop-down menu.
4. Select the port into which the device is connected from the **Available ports** drop-down menu.
5. In case there are device specific options and configuration parameters, fill the parameters.
6. Click **OK** to save the device configuration.

# Configuring Pelco KBD300A keyboard

The system supports the Pelco KBD300A keyboard, which can be used to control dome cameras through the Workstation application. The keyboard has a joystick, a numerical keypad, and keys for different functions. You can use the keyboard to pan, tilt, and zoom a dome camera. In addition, you can move a dome camera to a preset position or start a camera tour.

You can connect the keyboard to any computer with the Workstation application.

**NOTE:** *The KBD300A keyboard must have the firmware version 5.0 or later. The version number is shown in the LED display when you turn on the keyboard. Use the DIP switches on the rear of the keyboard to select the operational mode CM6700 ASCII.*

**To install a Pelco KBD300A keyboard:**

1. Configure the keyboard driver as instructed in "Configuring external devices" on page 83.
2. On the menu bar, click **User**.
3. Select **Dome keyboard settings**.
4. Select a camera on the list, and click the **Up** and **Down** buttons to associate a key for the camera. Repeat the process for all dome cameras.
   **NOTE**: *If the system contains only one dome camera, the Up and Down buttons are not in use.*
5. Click **OK** to save the settings.

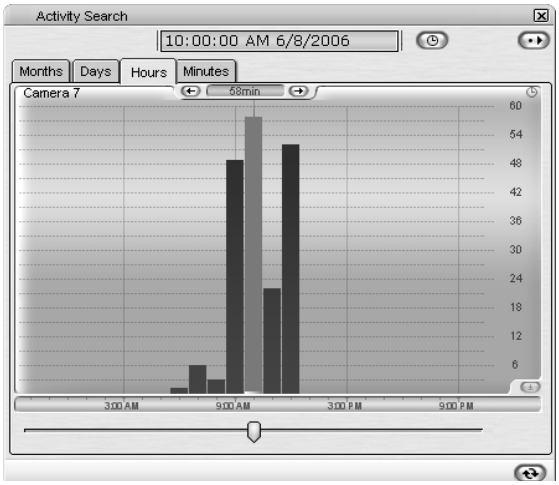
# GLOSSARY

**acknowledge**

Acknowledging an alarm means selecting the alarm from the **New** tab in the **Alarms** window and clicking the **Acknowledge** button. Acknowledging an alarm closes the alarm view automatically. You can acknowledge alarms only if the administrator has set the alarm as acknowledgeable and if you have been given the required user rights for acknowledging alarms.

**Activity Search**

Activity Search shows recorded video, audio, or text data as a bar graph.




*Activity Search*

**alarm**

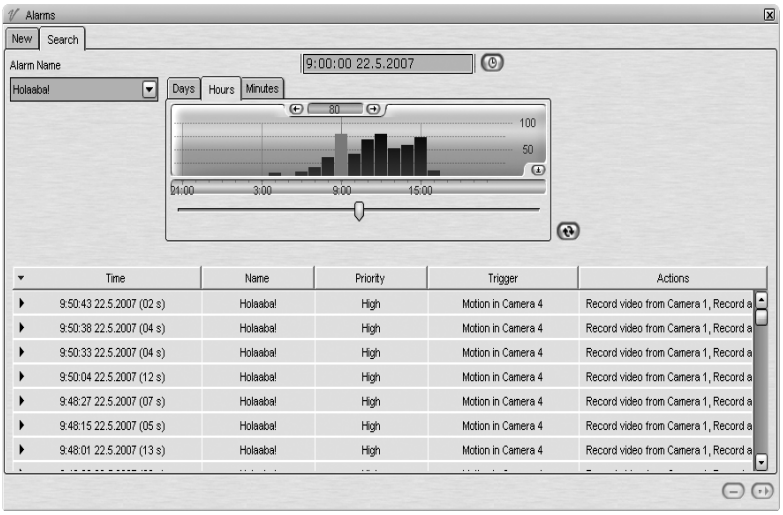
Different types of events can be set to cause alarms and different actions. For example, movement in image can cause video to be recorded.

**alarm audio**

See *alarm view*.

**Alarm Search**

You can use the **Search** tab in the **Alarms** window to find all alarm video and audio recordings.




*Alarm Search tab*

**alarm pop-up window**

See *alarm view*.

**alarm view**

When an alarm occurs, a feed from a camera or microphone can be set to automatically open in an *alarm popup window*. The feeds are called alarm views. The pop-up window can contain up to 16 alarm views.

There are two types of alarm views: video views and audio views.

An *alarm video view* shows video from the alarm camera.

An *alarm audio view* shows an oscilloscope, which shows the frequencies of the audio signal in graphical form.

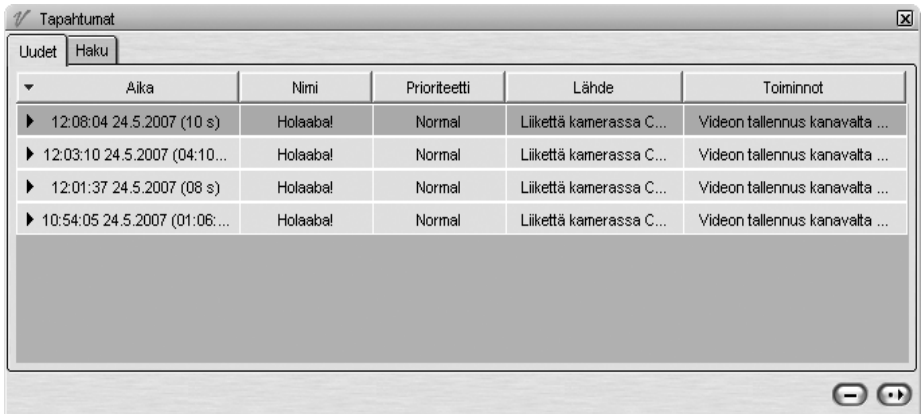
*An alarm video view*

**alarm video**

See *alarm view*.

**Alarms window**

The **New** tab in the **Alarms** window contains a list of all alarms that have occurred since your logon. The alarm list is used for managing alarms, for example, playing back alarm video and acknowledging alarms. The tab shows up to 100 most recent alarms. The list is cleared automatically when you change profiles or log off Workstation.




*Alarms window*

**audio, audio channel**

You can listen to real-time audio and play recorded audio in the same way as video. A recorder can have multiple audio channels.

**audio view**

Shows a visual representation of the audio signal.

*An audio view*

**audio communication**

Audio communication refers to a two-way audio channel that is used, for example, as a gate or door phone. Through the channel, you can speak with another person over a TCP/IP network. Each recorder has one audio communication channel.

**audio high**

The system detects audio when the audio level exceeds the "audio high" limit. In addition, alarms can be triggered when the level is exceeded.

**audio low**

Alarms can be triggered when the level of audio drops below the "audio low" limit.

**audio sample**

An audio sample is a point of recorded audio. In the same way as video consists of images, audio consists of audio samples.

**automatic lock and automatic logoff**

You can protect the client programs so that the program is automatically locked, or you are automatically logged off if you do not use the program for a set time.

**bookmark**

You can add shortcuts to video images and audio samples to the Bookmarks list for easy access later. These are called bookmarks.

**camera tour**

Camera tour refers to one of the following:

1) A dome camera moves from one preset position to another.

2) Video is shown, in the same video view, from different cameras in sequence.

3) Video is shown on a video monitor from different cameras in sequence.

**Change State (Switch On/Off)**

Changing the state or switching an output on or off refers to changing the state of a digital output to the opposite state (closed or open).

**channel**

Refers to a video, audio or text channel.

**clipboard**

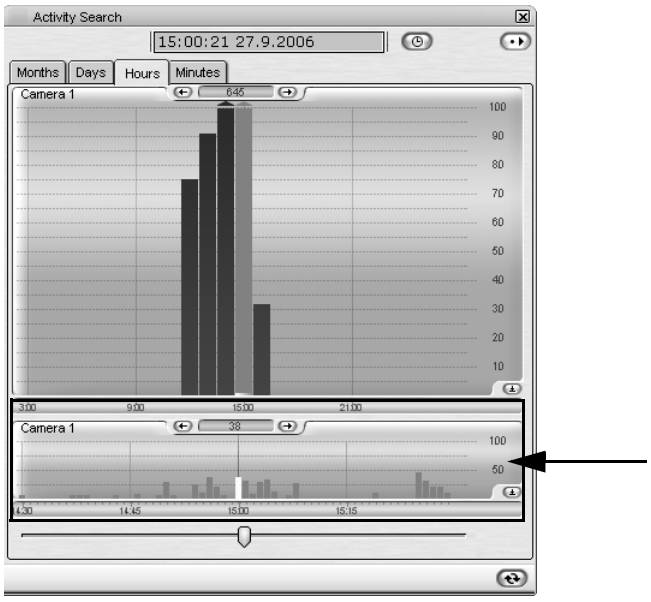
The clipboard is a page in the **Properties** window where you can capture video images and then print them or save them on the hard disk or a floppy disc. The captured image is shown on the clipboard.

**data**

Data refers to video, audio or text that is captured and recorded on hard disk. Data can also be exported from the system.

**detail view**

The detail view shows a smaller graph below the primary graph in Activity Search. The smaller graph shows a smaller time scale view of the selected time. For example, if the **Hours** tab is selected, the detail view shows the recorded material for each minute of the selected hour.




**device**

The navigator contains devices, which can be cameras, audio channels, text data channels, an audio communication channel, digital inputs and outputs and video outputs (monitors). See *Navigator*.

**device group**

Devices can be put into device groups. See *Navigator*.

**device window and device views**

You can open several device views into a device window. A device window can contain, for example, video views, audio views and digital input views.

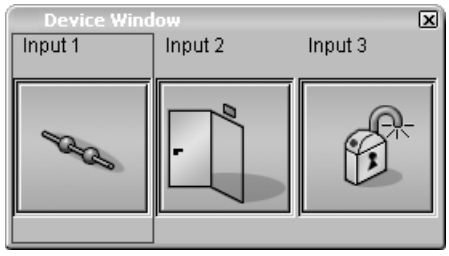
*A device window with a two video views, a digital output view and an audio view.*

**digital input**

External devices, such as glass break sensors or door sensors, can be connected to the digital inputs of a DVR. When the circuits of the device are closed or opened, a signal is sent to the program. This can be shown in a digital input view in the Workstation program. The inputs can also trigger alarms.

**digital input view**

A digital input view shows the state of the digital input. The administrator can select the icon that represents the input.



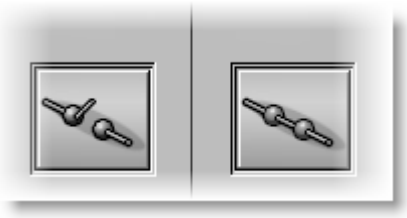

*Three digital input views in a device window.*

**digital output**

External devices, such as doors, gates, lights, or sirens, can be connected to the digital outputs of a DVR. From the Workstation program, the you can open or close the circuits that control the devices.

**digital output view**

A digital output view has an icon that changes to show to state of the output. There are several icons to choose from.



*Two digital output views*

**dome camera**

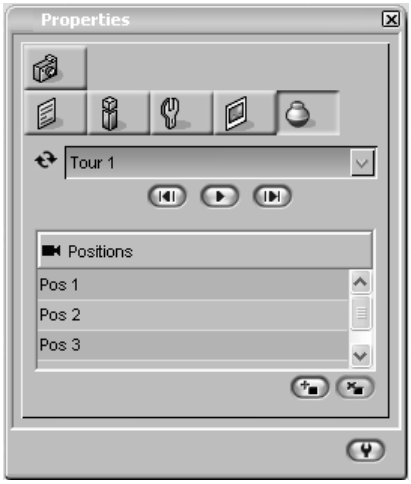
A dome camera (PTZ camera) is a camera that you can move to different directions from the Workstation program. Depending on the camera model, the camera can also have additional functions, for example, zoom control, iris control and preset positions.

**dome control**

Dome control refers to panning, tilting, and zooming a dome camera and also to using preset positions and camera tours.

**Dome Control tab**

A tab in the Properties window that contains a list of saved camera tours and a list of saved positions.




**DVMS**

An acronym for digital video management system.

**DVR**

A digital video recorder has input connections for analog cameras. The DVR compresses the video signals digitally and stores them on the hard disk.

**dwell time**

Dwell time refers to one of the following:

1) The time a dome camera stays in one position.

2) The time video is shown on a video monitor from one camera.

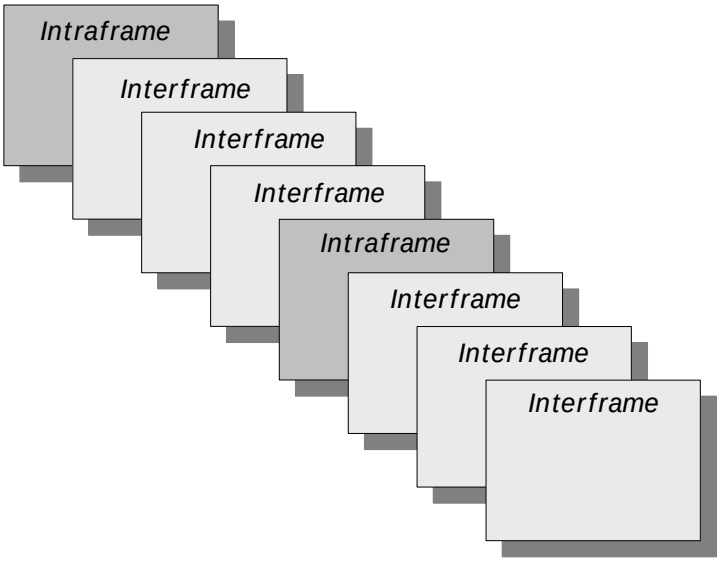
3) The time video is shown from one camera in a camera tour window.

**home position**

You can set a home position for a dome camera. The position specifies the vertical and horizontal positioning of the camera, as well as the zoom, iris, and focus adjustments. The camera moves to the home position if it is not used for a specified time. In addition to a specific static position, the home position can be a preset camera tour.

**intraframe**

An intraframe is an independent frame that contains all of the image data. Between intraframes are interframes, which contain only the differences to the previous intraframe. A new intraframe is usually coded at least once per second. However, for some IP camera models, the frequency is lower. In addition, some camera models may have a set number of interframes per intraframe regardless of the number of recorded images per second. Intraframes and interframes and used in WMC9 and MPEG-4 compressions.




*MPEG-4 and WMC9 compression. Intraframes and interframes.*

**ips**

Images per second.

**layout**

You can save the windows and views that are shown in the user interface as a layout. You can save several such layouts.

**local cameras and local monitoring**

Local monitoring means that video is streamed directly from the capture card to the display adapter. It is available only when the Workstation program and the DVR are on the same computer.

**media clip, clip**

Media clip refers to video and audio clips that you can export and save on the local hard disk or a CD, DVD or USB device.

**Motion Search**

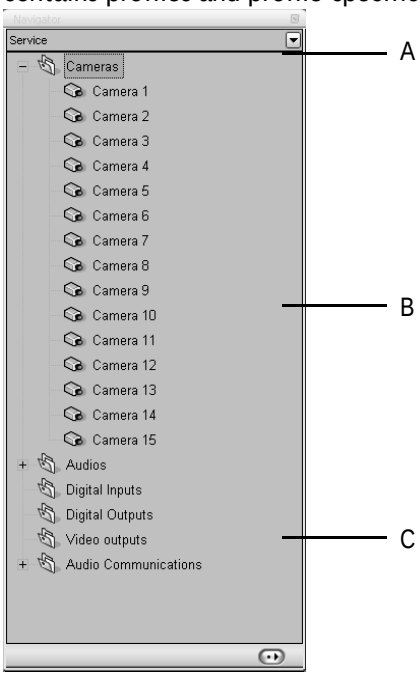
You can use Motion Search to find images with movement in a specified area of the camera scene.

**move time**

Move time refers to the time it takes a dome camera to move from one position to the next. Move time is not included in the dwell time.

**Navigator**

The Navigator is the primary tool for accessing the cameras and other devices. It contains profiles and profile-specific devices.




*The Navigator. A. Profile list B. Devices C. Device groups*

**NVR**

Network video recorder. Stores digital images directly from IP cameras that are connected to a network.

**polarity**

Refers to the state of digital inputs and outputs. The state can be open or closed.

**preset position**

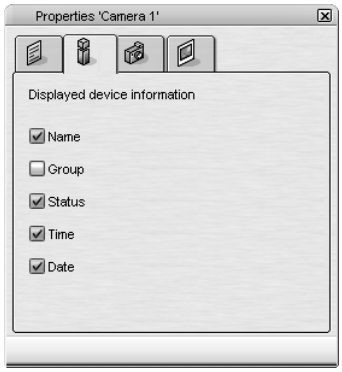
A saved dome camera position. A camera position specifies the vertical and horizontal positioning of the camera, as well as the zoom, iris and focus adjustments.

**profile**

A profile sets your rights in the system. It specifies the devices that you have access to and the actions you are allowed to perform with each device. You can have as many as five profiles.

**Properties window**

The Properties window shows information about devices. In addition, you can change device settings and access some commands through the Properties window. For example, you can capture and print images on the **Clipboard** tab of the Properties window.



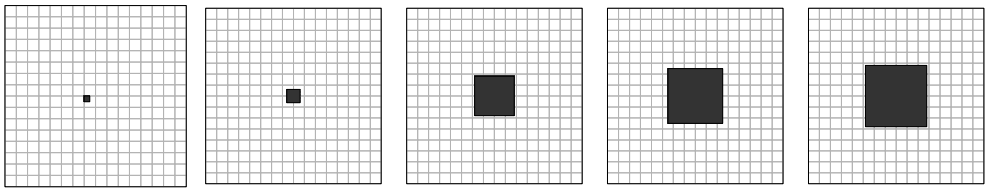

**pulse**

You can send a pulse to a digital output of a DVR. The pulse changes the state of the output to the opposite state for the specified duration. After the duration is over, the output returns to the state it was in.

**quantity of motion**

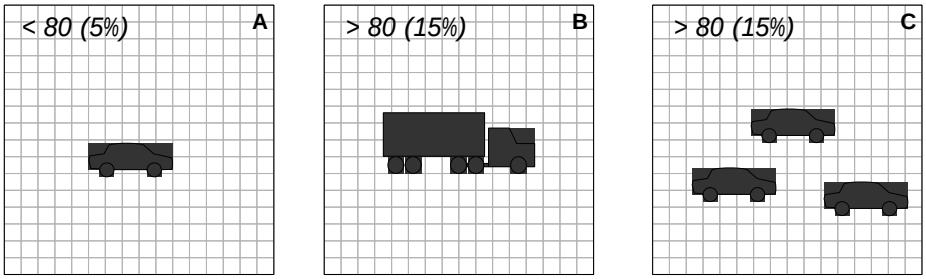
A setting in Motion Search that specifies what percentage of pixels must change in the image area for the search to recognize motion. The shown values are scaled from the actual percentage values.

Use the following figure as a guideline for setting the quantity of motion. The figure shows five image areas. Below each image is the quantity that corresponds to the shaded area. The number in the parenthesis shows what percentage the shaded area is of the total image area.




*Quantity of motion*

Example: If you want to find images where the moving object fills more than 10% of the image area, set the quantity value to 80. Image A is ignored, because the object fills only 5% of the image area. The system finds images B and C. In image B, the object fills 15% of the image area. In image C, the three objects together fill 15% of the image area.




*Specifying the quantity of motion.*

**real-time video and audio**

Real-time video or audio is sent and received almost simultaneously.

**recorder**

This word is used to refer to DVRs and NVRs. Consists of the computer and the video recording software.

**reference image**

A still image captured from a camera. You can compare the video view to the reference image to make sure that the camera is pointed at the right direction.

*A reference image.*

**SM Server**

Short form of System Management Server.

**system administrator**

System administrators have the right to log on to the System Manager program and change all system settings.

**text data, text**

The recorders can record text stream data from devices like cash registers or gas station pumps. You can view this text data in text data views synchronized with video or audio views. You can also search text data by specifying the exact text to search or by other criteria.

**Time Search**

The system finds the nearest recorded image or audio sample from the given time forward or back.

**toggle**

Toggle (verb) refers to changing the state of a digital output to the opposite state (closed or open). See **Change State (Switch On/Off)**.

**video view**

Shows real-time or recorded video from a camera.There can be several video views within the same window (device window)

*A video view*

**view**

Refers to a visual representation of device information. A camera view shows video, an audio view shows the frequency of the audio signal, an output view shows whether the output is active or inactive.

**wait time**

Wait time refers to the time after which a client program is locked or you are logged off if the program is not used.

**zoom**

Used in two different contexts:

1. The zoom function in dome cameras (PTZ cameras).

2. One of the image tools that can be used on any camera image to magnify an area.

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